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The Way of Things

The New Laws.

THOSE of us who have taken the trouble to look at our new driving licences, will have been forcibly reminded by the heading "Road Traffic Act 1930" that we are now entering on a new era in the history of motoring.

In this country, more than any other, has the progress of motoring in all its aspects been hindered and restricted by out-of-date and prejudiced legislation. For some time we have been promised revised laws to suit modern conditions, and as the new regulations now come into force it is a good time to consider, without much hope however, how we are now affected, and what improvements, if any, are to be introduced. There are, without doubt, some new regulations which were much needed, and which are sensible, but in the main the new laws seem to have matured in an atmosphere of prejudice, affected by a fear that any concession to motorists must be counterbalanced by some heavy restrictions.

Various new offences have been defined, and heavier penalties than before made legal for many others.

Therefore, the motorists' great hope lies in the administration of the laws, rather than in their substance. If they are used as the old laws have been used, it will be only too easy for some comparatively trivial oversight, or a witness ignorant of motoring conditions, to land one in gaol.

However, in the past decade the great spread of motoring in this country should have educated those in whose hands is the power of the law, to judge accurately and without prejudice, so that the real offender, whose incompetence and false confidence are so dangerous, may be eliminated without interfering with more reasonable citizens.

And so, although at first sight, we appear to have stepped out of the frying pan into the fire, the fact that motoring has become a national necessity as well as a great national industry, should protect us in some measure. At the same time all wise motorists will behave with particular circumspection while the new regulations are settling down, until they know just how they will be interpreted.

In the matter of compulsory insurance the wording of the act is rather vague, but those who visualise any crippling monopoly, should remember that the competition between insurance companies, always keen, will now be even keener with the increase in business, and this will be another protection against the exploiting of the motorist. At first sight, perhaps, the new conditions may seem uninviting, but we feel that there is no need to fear that they will fail to adjust themselves, and will finally be of benefit to all motorists who show consideration for their fellow road-users.

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A HARDY ANNUAL

GOOD ENTRY AND SPORTING COURSE FOR THE LONDON-GLOUCESTER

ALTHOUGH one cannot remember the London-Gloucester ever starting from London, it used not only to go to Gloucester, but to return thence to the start. Having for some years now refrained from going to Gloucester it now elects to finish in the wilds instead of at home. All these changes of route, however, have not altered the character of this run of the North West London Club, and the 20th trial of this name, run on the 13th of last month was the same thoroughly enjoyable, sporting, well-run show that we have learnt to look forward to.

The start this year was transferred, to everyone's satisfaction, from the desolate surroundings of the Slough Trading Estate, to the cheerful atmosphere of the Bridge Hotel at Staines, scene of many like events, and midnight saw the varied assembly getting ready for the fray.

Maidens Grove—By Night.

The first hill was Maidens Grove, whose surface is fairly permanently slippery at this time of year, and though not difficult, was made harder by being tackled in the dark. The posts, which are being fixed on the hill at present, cut down the available room, and one or two motors bent wings by being a bit too frolicsome on the lower part of the hill.

M.G. Midgets were entered in force, and registered some excellent climbs and a few failures, Crump, Welch and Price representing the former.

G. A. Lester's De Soto was not too steady, and proceeded to knock itself about on the posts mentioned above, and was pushed up. Miss Roper's A.C. failed in an overheated condition while Chetwynd (Lea-Francis) got up—but only just!

A refreshing exhibition was provided by the Frazer-Nashes which all rushed up in a joyful manner, Hopkins and Ponting being the fastest.

From Maidens Grove the trial was simple going to the check at Farringdon, and thereafter there was nothing but the rain to make things unpleasant till Cheltenham and breakfast. Having fortified themselves against the elements, the elements relented, and the stiffest part of the course was tackled under very pleasant conditions.

Five observed hills came close together and kept everybody busy. Stancombe, Bismore, Mackhouse, and Knapp, produced very few failures, and Bownham, which followed was not difficult, but caught many unawares who did not maintain sufficient speed to rush the slimy section at the top.

The next excitement was provided by the restart on Bushcombe, and many failures were caused not by the surface, but by lack of power. M.G. Midgets with one or two exceptions, were again effective, as were the small Triumphs. Other good performances were recorded by Chetwynd's Lea-Francis, May's Ceirano, Hopkin's Frazer-Nash, and Foster and Livesey on Wolseley Hornets, while the larger classes produced a rousing performance when W. M. Couper shot up on his supercharged Lagonda.

Mill Lane was cut out as being likely to cause too much baulking, and the next and final test of importance was the climb of Ferris Court. This is quite a long hill with an acute right hand hair-pin, which called for good driving without being unfair in any way. This hill was made the scene of a restart and acceleration test, which included the hairpin. As a clean climb was only recorded if the time was within 10% of the class average, some fireworks were to be expected, and duly occurred.

The Triumph Sevens were good and had ample power, while the M.G. Midgets upheld their reputation. Among the larger cars things were livelier, however, and the terrific getaway of the Frazer-Nashes led Buting and Hopkins to be over enthusiastic in approaching the hairpin, with the result that they both crashed into the bank good and hard. Their cars did not appear to mind this treatment in the least, however, and they restarted and disappeared over the top. Lester in another Nash, however, showed that a little restraint would have saved them from failing as he came round neatly and made a good climb.

The Wolseley Hornets were again impressive while Baker's Lagonda was neat and fast, as was Miss Allan on a similar car.

The Finish.

It was only a few miles on to the finish at Birdlip, where all competitors, successful or otherwise, agreed that it was a thoroughly good trial, and that many thanks are due to the North West London Club and their various willing helpers.

The following cars checked in at the finish :—

L. A. Welch, J. B. Carver, J. A. Berry, E. A. Denton, R. V. Price, T. G. Clarke, M. F. L. Falkner and A. C. Fairclough (M.G. Midgets) ; Miss V. Worsley and G. H. R. Chaplin (Alta-Austin Sevens) ; R. C. Prince and W. L. Watson (Austin Sevens) ; J. F. Cooknell, C. H. Lawford, C. F. Widmann, R. A. Roy, and H. W. Wells (Triumph Super Sevens) ; C. V. Wells, R. J. W. Appleton, and H. C. Hunter (Riley Nines) ; V. H. Tuson (Fiat) ; C. A. Biddle (Salmson) ; E. C. Lester, B. Johnson-Ferguson, W. A. Ponting, R. L. Bellamy, and D. G. Hopkins (Frazer-Nashes) ; F. N. Foster and C. H. Livesey (Wolseley Hornets) ; W. J. Haward (Bayliss-Thomas) ; Miss L. M. Roper and Miss E. F. M. Caulfield (A.C.'s) ; M. W. B. May (Ceirano) ; Hon. A. D. Chetwynd (Lea-Francis) ; J. R. H. Baker, W. M. Couper, G. W. Gemmell, Lord de Clifford, and Miss M. Allan (Lagondas) ; G. W. Olive (Standard) ; C. S. Hollinghurst (2-litre Rover) ; R. M. Mere (M.G. Six) ; E. A. L. Midgley and E. H. L. Sexton (Fords) ; A. H. de Solla (Crossley).

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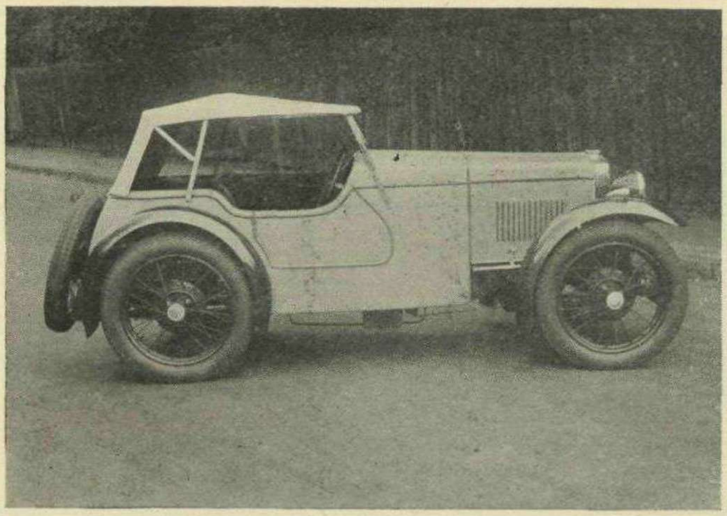

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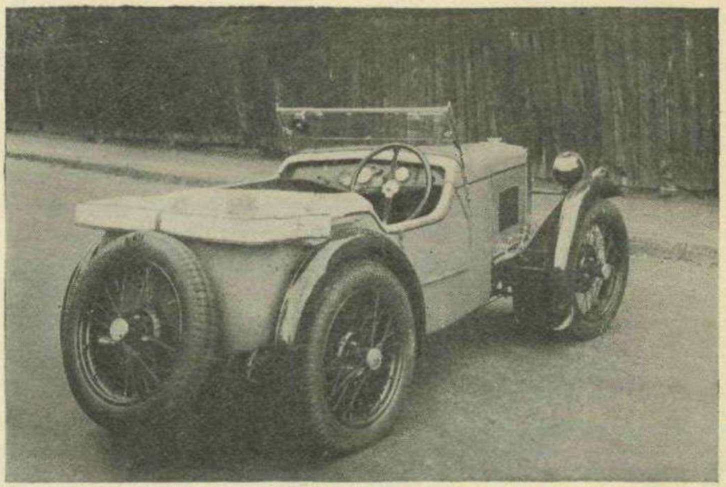

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THE 4½-LITRE SUPERCHARGED BENTLEY

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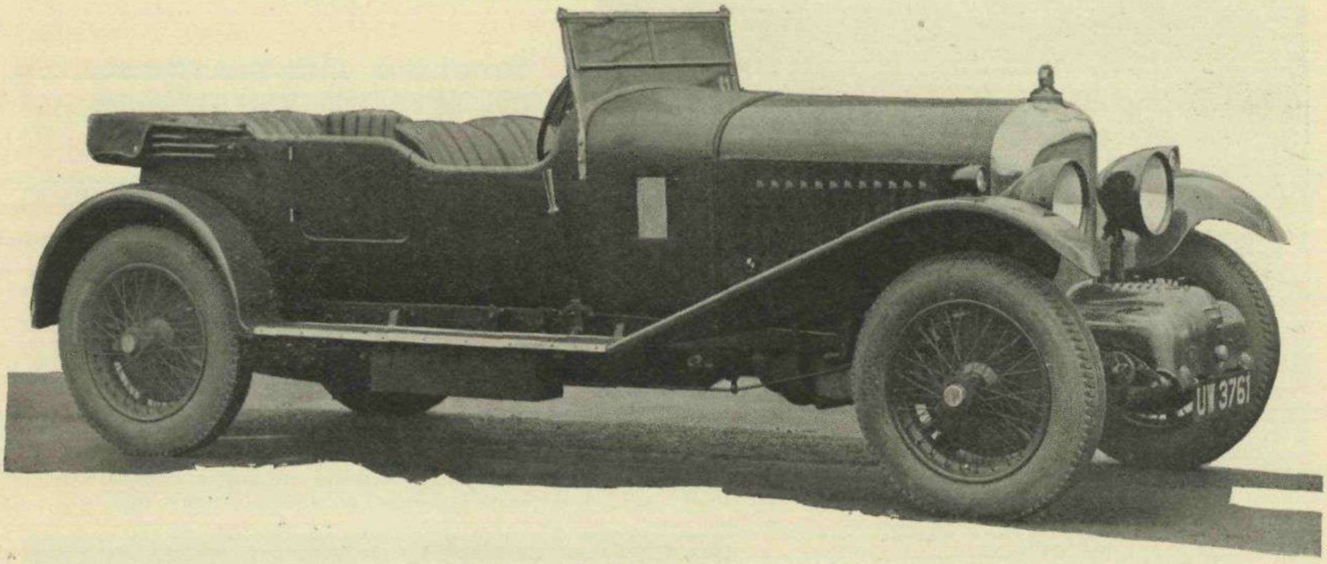

The 4½-litre Bentley as it appears for 1931.

Brief Specification.

Engine : Four-cylinders, c.h.c., bore and stroke dimensions : 100 × 140 *m.m.* (4,398 *c.c.*), *4-speed gearbox : ratios—1st,* 9.3 *to* 1 ; *2nd,* 5.7 *to* 1 ; *3rd,* 4.7 *to* 1 ; *top,* 3.53 *to* 1. *Dimensions : wheelbase 10ft. 10ins. ; track 4ft. 8ins. ; overall length, 15ft. 4½ins. ; width 5ft. 8½ins. ; heigth 4ft. 8in. Turning circle 49ft. Weight 37cwt. Price, with open four-seater body,* £1,720

WHEN Bentleys first introduced the supercharged edition of their famous 4½ litre model, a number of prospective owners of this type of car held back from purchase until they had seen how the car performed in the chief racing events of the season. In view of the reputation of the firm, and the way it has been gained, it would hardly seem likely that a model would become available to the public which would not give complete satisfaction, and now that the racing season is over, the most cautious buyer must have complete confidence in this model. The few minor troubles encountered early in the year, due to the amazing speed of which Birkin's Bentley team were capable, were soon overcome by a firm quick to apply the lessons of racing to their production cars.

The "4½'s" had a season which grew progressively more successful, until it culminated in the remarkable performance of Messrs. Hall and Benjafield in the 500 Miles Race, in which they averaged over 112 m.p.h. for the full distance, a higher speed than has ever been achieved in a long distance race on any track in the world.

From a car bred in such an atmosphere of speed one expects an abnormal performance, and one is not disappointed. The production model is a genuine hundred-mile-an-hour car, and as such it takes its place without question among the *élite* of the world's sporting cars. It is, however, more in the manner in which it accomplishes things, rather than in the bald figures themselves, that the true character of the car becomes apparent. It is possible to get excellent performance figures with quite a small engine, but it needs a power unit of more generous dimensions to give the refined and effortless performance which is the great characteristic of this Bentley.

It is now well known that supercharging confers many benefits apart from the actual increase in speed and power. The greatly improved distribution gives qualities of smoothness not hitherto associated with a fast car, and it is a fact that the supercharged edition is more docile at really low engine speeds than the standard 4½ litre model. On top gear the car can be driven perfectly smoothly at less than 10 m.p.h., which is truly remarkable when it is remembered that this ratio is 3.5 to 1. The supercharging has also made possible remarkable acceleration, and when a stretch of open road appears, and the gears are used as they should

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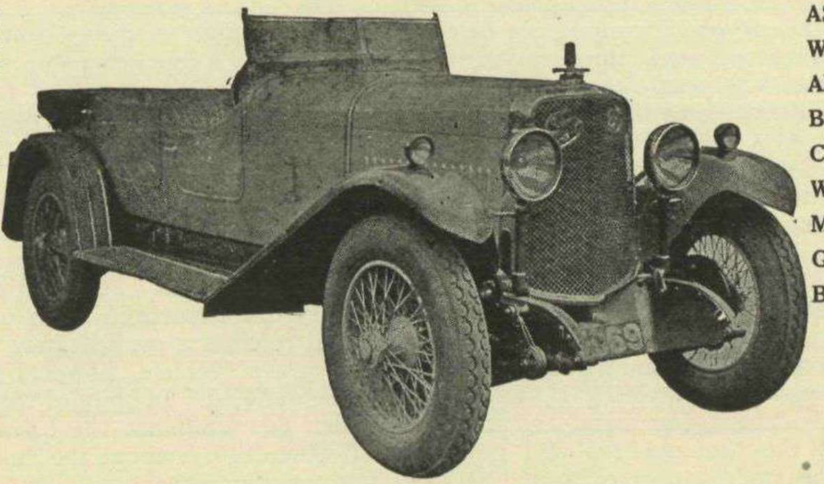

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THE 4½-LITRE SUPERCHARGED BENTLEY.

be, the car momentarily doffs its sheep's clothing and reveals its ancestry of well-tried racers.

The delights of a close ratio gear box can only be enjoyed to the full when the change is naturally easy, and in this respect it leaves nothing to be desired, and is a marked improvement over the older 4½ litres. Using the gears, 90 m.p.h. can be reached from a crawl in just over half a minute, while 60 and 75 m.p.h. can be comfortably attained on second and third respectively. The actual car we tested was nearly new and somewhat stiff, so it was not advisable to force the revs too high.

The maximum speed on the level was 95 m.p.h., while over 100 m.p.h. was attained under slightly more favourable conditions. When fully run in there is no doubt that 100 m.p.h would be well within its range without any assistance from the force of gravity.

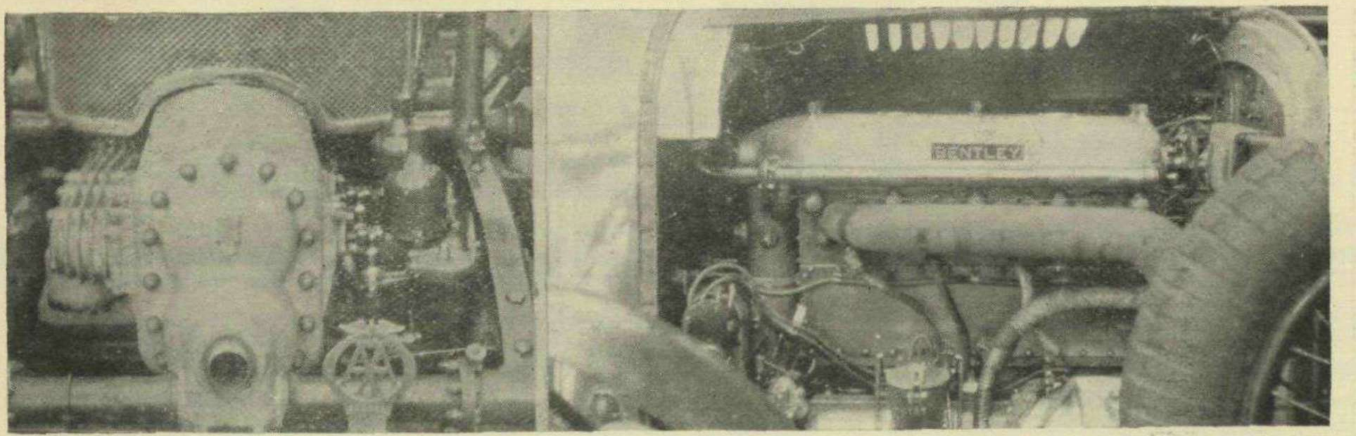
The steadiness at all speeds is what one would expect from a car from this factory, while modifications to the front springs have increased the comfort at low speeds over indifferent surfaces. The steering is, for a car weighing approximately 2 tons, very light, and it is the sensitive lightness of the thoroughbred and not the lifeless lightness of the stodgy town carriage. It has just the right amount of self-centering, and makes driving very pleasant under all conditions. The brakes, which include semi-servo shoes in the front wheels, are smooth, light to operate, and extremely powerful. They will bring the car to rest in just over 50 feet from 40 m.p.h., and their great power inspires confidence and makes high average speeds safe and comfortable.

In common with all the most successful engineering productions, the chassis is simple and free from any freakish innovations, the engine being a straightforward four-cylinder of very robust design and construction, having overhead valves operated by an overhead camshaft.

The Villiers supercharger is bolted to the front of the crankcase and is driven from the crankshaft. Oil is supplied by a separate pump to the gears of the blower, while a scavenging pump collects any surplus and returns it to the crankcase. Two Autopulse pumps supply fuel to the two S.U. carburettors from which the blower draws its mixture.

The four-seater body by Van den Plas is in keeping with the rest of the car, while detail improvements include slightly greater breadth, and improved comfort in the rear seats. Pneumatic upholstery ensures the luxury one expects in a car of this class, where every detail receives a consideration which is impossible in a low priced vehicle, however excellent the value for money offered. In spite of the very critical attitude in which one examines the qualities of a vehicle in the £1,000 category, about the most serious fault we could find was the rather small clearance between the outside brake lever and the body, a matter easily remedied at a word to the makers.

In short, the 4½ litre supercharged Bentley is a car for the connoisseur of sporting cars, and moreover, proof that this country can still make a car which can compete with confidence and success with the best the world produces.



(Motor Sport Photographs).

Two views showing (left) the supercharger mounted between the dumbirons, and (right) the exhaust side of the engine.

THE SPRING GRAND PRIX

MENTION of Spring at the moment seems remarkably premature, but in the Argentine that season is nearly over, and to celebrate it a race was held on 23rd November.

The event took place on the Mercédès track near Buenos Ayres, and was over a distance of 250 miles. Fittingly enough, in view of the name of the track, the race was won by a big Mercédès-Benz driven by Carlos Satuszeck, with Ricardo Caru on one of the old racing Fiats second, and a Maserati third. The official results were as follows :—

1, Carlos Satuszeck (Mercédès-Benz), 3h. 4m. 43s. Average speed 78.34 m.p.h.

2, Ricardo Caru (Fiat), 3h. 11m. 37 3/5s.

3, Juan A. Malcolm (Maserati), 3h. 18m. 7 4/5s.

RUMBLINGS

By "BOANERGES"

IF there is anything over which we ordinary mortals may consider that scientists have let us down, it is in the treatment of fog. The snappiest motor car on earth is brought down with a sharp jerk to the level of the meanest, when the weather decides to blot out all vision, and although there are many and various devices for use on motorcars under such circumstances they do not really help to any extent. Having had a few doses of this pernicious affliction recently, I have again had to own myself defeated in the matter of getting anywhere in a reasonable time. Most of the regular remedies, such as coloured discs on the lamps, etc., are well enough known, but as they are precious little help no one is much worse off for not knowing them. When things get really thick,—I am referring to the fog only—headlights are fairly useless in any form, though if they are dipped they are somewhat less hindrance than if they are not.

If one is anywhere in the neighbourhood of a great city some use can be made of trams. In fact I should imagine that this is about the only time trams or tramlines are anything but an infernal nuisance. Nevertheless, as they run on rails, they do not have to find their way, and I have often crept home guided by the friendly glow from one of these normally tiresome vehicles.

It is however, a good thing to make sure that the tram being followed is going to the desired destination. Forks in the road are not easily picked out in a real pea-soup fog, and I shall not soon forget the occasion on which I followed a tram, in a series of short rushes, for some miles up the wrong road, to a part of London I had never previously seen!

A left hand drive vehicle is very useful in fog, and though it seems rather a far cry from sports cars to Ford vans, there are probably many readers of MOTOR SPORT who at one time or another went in for motorcycle racing in the days when sprint motors were always carried to and from the scene of battle. I had many amusing miles on an old model T on which the left hand drive enabled quite remarkable progress to be made through fog by hugging the kerb. Clinging to it over-assiduously is liable to land the vehicle in sundry yards, tramway depots, etc., but one gets used to that sort of thing.

Some drivers seem to have a special fog sense, which enables them to jog steadily along a perfectly sound course in the thickest blackness without any trouble, but it is a great mistake to hope that you are one of these people when you are not, as the motor will probably finish up in a ditch.

Starting from Cold.

In these days we are rather apt to forget that there was ever any particular bother in starting, as efficient electric starters and uniform fuels have made us thoroughly lazy. However, every now and then a motor decides to be difficult and we have to employ more drastic methods than usual. A little trouble recently with a not too new engine, brought to mind some of the time-honoured methods which used to be so successful, if little unconventional. When the starter has cried "Hold, enough," and churning round the handle at umpteen r.p.m. has ceased to amuse, and even the chilliness of the morn fails to provide excuse for further exercise, one comes back to the necessity of applying heat and/or power in quantity.

Given a large supply of really hot water, the worst case can usually be made more amenable to persuasion, and this is quite a good method. Circumstances do not always fit in, however, and something a bit more violent is indicated. A popular but somewhat hazardous method of warming things up, much in vogue some years ago, is to flood the carburettor gently, turn off the petrol and set fire to the carburettor. When most of the petrol—but not all—has been consumed, the fire must be extinguished by the application of rags, old gloves, or whatever the size and position of the carburettor demands. This is of course the sort of method *not* laid down in the instruction book, and in fact not to be recommended except in extreme cases and by an old hand at the game. If the fuel burns right out, the heat will probably ruin the float, while if the car is insured, no insurance company could be expected to have much sympathy with an owner who let the fire go a little too far!

Another method which I used to hear highly recommended, though I have never actually tried it, is to pack up a quantity of carbide in a cloth, wrap the whole outfit round as much of the induction pipe as possible, and then pour a little water on it. This is said to heat things up sufficiently to start anything, and was much in favour with sundry war-time lorry drivers.

This would, I fear, be one of those occasions on which one should *not* light an Abdulla, at any rate not within 50 yards of the vehicle.

To turn to a more serious aspect of this warming up business, there is one small tip which may be useful. Having started an engine in cold weather many people leave it running for a long time to get it warm, and yet it still does not like it, and the carburettor remains as cold as ever, or more so. This is because the constant evaporation of the fuel keeps the induction pipe and instrument almost freezing, when the rest of the engine is getting warm. The best scheme is to run the engine just long enough to get the head and cylinder block slightly warmed, and then switch off. This gives the heat from the block a chance to flow along the induction pipe and warm up the carburettor, so that when the engine is started up again a few minutes later they will stay reasonably warm. This is also much

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RUMBLINGS—continued.

cheaper than running the engine for ages till everything gets hot.

Shelsley Preparations.

To turn to a less chilly subject, there are already signs of considerable activity among the hill-climbing fraternity, and Davenport, among others, has decided that the Shelsley record must come back to this country, and he is solid in his faith in the suitability of the chain-driven Frazer-Nash type chassis as the means of regaining it. Seeing the number of times he has held the record, he has good reason for his belief, and there is no doubt that this sort of vehicle, with its terrific getaway, owing to its light weight and solid rear axle, together with its wonderful handling qualities, should be just the thing. He is now at work on a new "B.H.D." alias Spider, actually mostly Frazer-Nash. He has decided to add a little weight however in the very useful form of front wheel brakes, also to stick to the old twin engine, or rather to enlarge on it by making a four cylinder consisting in its essentials of two of these engines in tandem.

By way of spares he has also acquired the remains of another of the old o.h. camshaft twins, for some time belonging to A. S. Llewelyn, from time to time Lea-Francis exponent. Before this, the vehicle in question wast he property of the writer, who acquired it after it had seen service in many hands, and incidentally had a lot of fun with it.

Davenport's latest should certainly have a unique exhaust note, and judging from his previous motors a little cotton wool in the ears is very much indicated at the next Shelsley.

Multum in Parvo.

While nosing round the Frazer-Nash works the other day I noticed "The Terror," the very special single seater. This is now the property of R. J. G. Nash, who drove it at the Amateur Shelsley, and when he is more used to it should liven things up considerably. It has been having a few alterations carried out to the body, and is now a very pretty outfit, and looks decidedly businesslike with its narrow stream-lined body, short chassis, and twin rear wheels. Its $1\frac{1}{2}$-litre supercharged engine, when at the top of its form, gave off over 100 b.h.p. and as the vehicle weighs less than 8 cwt. the acceleration can be better imagined than described. "The Terror" should be a motor worth looking out for in next season's sprint events.

Another very delightful motor car, of more ordinary type, is now being built by Aldington for his own use next season, and it will probably be used for the Round-the-Mountain events at Brooklands in place of his old motor, which after a fine career has been purchased by a private owner—lucky fellow! The new car is standard enough in its essentials, and has a similar supercharged engine to the other. The chassis has been modified by dropping it slightly aft of the power unit and passing it under the rear axle, making it possible to lower the transmission and seating. The standard Frazer Nash is already very low however, and the engine could not be dropped any further without making the ground clearance dangerously small. A slightly different radiator is fitted, together with a

RUMBLINGS—continued.

very nice two-seater body. The job is not complete yet, but is sufficiently well under way to see that it will be one of the smartest sports cars on the road, and anyone who challenges it in a rash moment will find that the appearance is only a minor point compared with its performance.

Recent Records.

Now that Monthlèry is available at all times of the year, and is in any case more favourable for record-breaking than Brooklands, there seems to be no close season for records. There has been a deal of activity lately in spite of the appalling weather conditions. Dudley Froy and Field had a fine run of records recently in the 4½-supercharged Bentley, and Froy is also busy with plans for a special motor for long distance records next season. This is to have Eldridge's 300 h.p. Fiat engine in the big Leyland Thomas chassis. At least these are to form the basis of the car, but it will be altered considerably in other ways, and will probably have a special indirect top gear. Other record attempts have been full of excitement, as when the steering wheel came off Scott's 1½-litre G.P. Delage while Armstrong Payn was driving, and the car came to rest in the mud at the foot of the banking.

The delay caused by this was small compared with previous trouble owing to a broken magneto holding strap. In spite of this, and an ice-covered track they collected sundry class records, including 27 hours at 66.89 m.p.h.

The other drivers were W. B. Scott, and Rose-Richards of the successful Talbot team.

D. M. K. Marendaz trotted out the Graham-Paige once more and got the Class B 200-mile record at 101.85 m.p.h. This however, was not without incident, as Veendam who took over afterwards for some further attacks piled up after hitting the parapet in the mist. Fortunately he was not damaged but the motor is now definitely out of shape!

The Graham-Paige in racing guise looks rather snappy, though somewhat high. In side view, its long narrow and shallow body reminds me rather of Rapson's old Lanchester.

Fabric—One Hundred Acres.

Truly the motor trade is a colossal affair, with ramifications which are not often realised. As a case in point, consider the manufacture of the body of any good car, and try to count up the things which go to its making. Then multiply them by the number of cars made in a year!

At the Rover works, for instance, fifteen hundred cow-hides are consumed each week for upholstery. No wonder that 180 girls are constantly employed, making them up. As to the fabric with which the bodies are covered—and every Rover body of this type is a genuine Weymann, made under licence,—over six thousand yards of double width material are used weekly, making a hundred acres a year.

In this up-to-date body factory, there are over a thousand employees and between them they manage to use some twenty-five million feet of wood in a year—enough, almost, to reach from Coventry to the North Pole, and back! These being the figures for one single company, the consumption of the whole British industry may best be left to the imagination.

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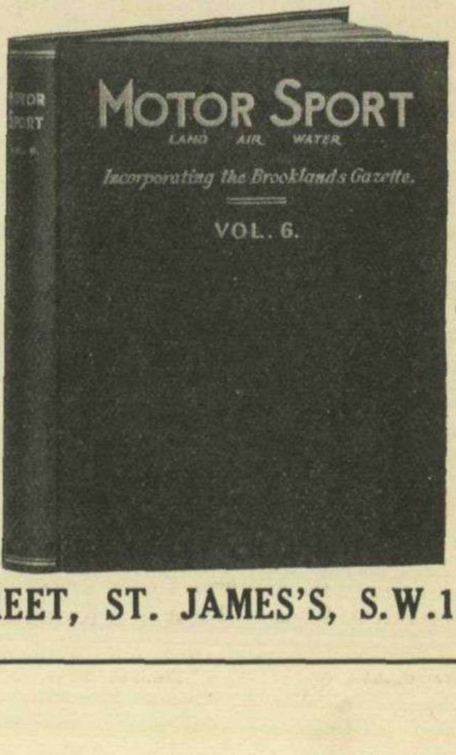
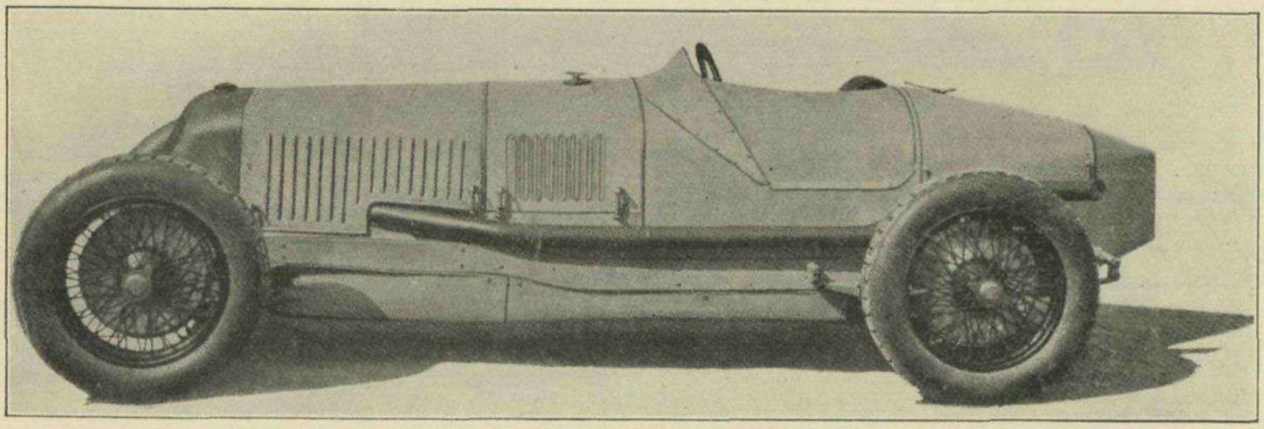


An Italian Champion

Details of the 2½-litre Maserati.



Chief Characteristics.

Engine, 8 cylinders.
Bore and Stroke, 65 x 94mm.
Capacity, 2,500 c.c.
Maximum Power, 175 h.p.
Maximum Speed, 6,000 r.p.m.
Compression Ratio, 7 : 1 or 8 : 1.
Timing, Inlet, Opens 15° lead ; Closes 45° lag. Exhaust, Opens 45° lead ; Closes, 20° lag.
Crankshaft, On 5 bearings, of which one roller.
Connecting Rods, Tubular.
Pistons, Aluminium, 4 rings.
Valves, Overhead, at 90°. Diameter 1.41 ins. Lift .31 ins. Seat at 45°.
Valve Springs, 2. Tension 143 lbs.
Camshaft, Overhead.
Plugs, In centre of cylinder head.
Head, Detachable.
Ignition, Magneto.
Lubrication, Double pump.
Carburetter, Weber.
Supercharger, Roots, direct drive.
Clutch, Multiple disc, running dry.
Gearbox, Four speeds.
Transmission, Single cardan shaft.
Brake drums, Dimensions 15.68 x 1.96 ins.
Wheels, Rudge Whitworth.

THE performance of the 2½-litre Maserati in the great races of the 1930 season has been sufficiently striking to make this machine of particular interest to all followers of automobile sport. Its successes in its native country have included the Grand Prix of Rome, with Arcangeli as its driver, while Varzi has brought one of these cars home first in the Coppa Acerbo, the Grand Prix of Monza, and, outside Italy, in the San Sebastian Grand Prix. What renders the car even more interesting, however, is that Maserati, following the excellent lead set by Bugatti, has decided to make his successful racing model on a commercial scale, and machines identical with those which have scored such striking successes in last year's classic races, are now available to the general public. Several English sporting motorists have already acquired cars of this type for use in the big events of next season, and it is probable that others who have not yet decided on a new mount will find in the Maserati something which comes very near to their ideal of a motor car for serious competition work. It may thus be of considerable interest to readers of MOTOR SPORT if we give a fairly detailed description of this car.

In the first place, even if the Maserati has shown itself during the past season superior on so many occasions to the best of the stern competition it has had to encounter, this result has not been attained by any revolutionary break-away from general racing practice. Maserati has, in fact, preferred to build his car along the well-tried lines which were followed in the Grand Prix races of 1923-7 by such firms as Fiat, Alfa-Romeo and Delage. In several instances even the Bologna constructor has seemed to prefer to follow rather more classic practice than do some of his competitors, and count on attaining superiority by very careful manufacture. As an example, the big ends of this engine's connecting rods are fitted with plain white metal bearings, but no lubrication difficulties have been encountered, although naturally the Maserati's maximum revs. are as high as those of other racing engines of similar type. If the following description of the car therefore does not seem to disclose anything very important in the way of technical novelties, it must not be supposed that for that reason the machine must be debarred from consideration as one of the potentially most successful in competition with really worthy rivals.

The engine is a straight-eight, the cylinders having a bore and stroke of 65 x 94 mm., and thus a total capacity of just under 2,500 c.c. The compression ratio is not particularly high for a racing engine amounting to 7 : 1 or 8 : 1. The head is detachable and hemispherical in shape and carries two valves per cylinder. The valves are operated by two overhead camshafts, which take their drive from the crankshaft by means of a train of nine steel pinions enclosed in a housing at the back of the cylinder block.

The valves themselves are made of a special steel, and, there being only two per cylinder, have the fairly

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AN ITALIAN CHAMPION—continued.

large diameter in relation to that of the head of 1.41 ins. The inlet valve has a concave head in order to obtain lightness, but the head of the exhaust valve is flat as the considerable heat to which it is subjected might otherwise lead to distortion and imperfect seating, the seat itself being at 45°. The valves are closed by two concentric springs, having a combined tension of about 143 lbs., and are mounted at 45° to the vertical, the angle between them thus being a right-angle. The timing is arranged so that the inlet valve opens 15° early and closes 45° late ; while the exhaust has a lead of 45° and closes 20° after top dead centre. Before leaving the valve gear it may be noted that when a dynamo is fitted it is driven from a prolongation of one of the camshafts and is mounted above the gear-box.

The crankshaft weighs about 45½ lbs. and has five bearings, of which the centre is provided with rollers, the two outside ones being of cast iron and those nearer the centre being lined with white metal. The crankshaft is very carefully balanced and is short for a straight-eight engine with the result that it has been possible to keep any form of vibration down to a minimum, and it has not been found necessary to use any kind of damper.

The connecting rods are tubular and very light, weighing no more than 1.17 lbs. without the gudgeon pins, which add an extra 1.59 oz. The diameter of the rods and of the gudgeon pins is 0.7 ins. the interior of the latter measuring 0.51 ins. in the centre, the ends being tapered. The pistons are of a special light alloy and weigh 11.7 oz., being equipped near their crowns with four rings.

Lubrication is attended to by two pumps, one of which delivers oil to the bearings and runs at 4/5 engine speed, and the other returns oil to the tank.

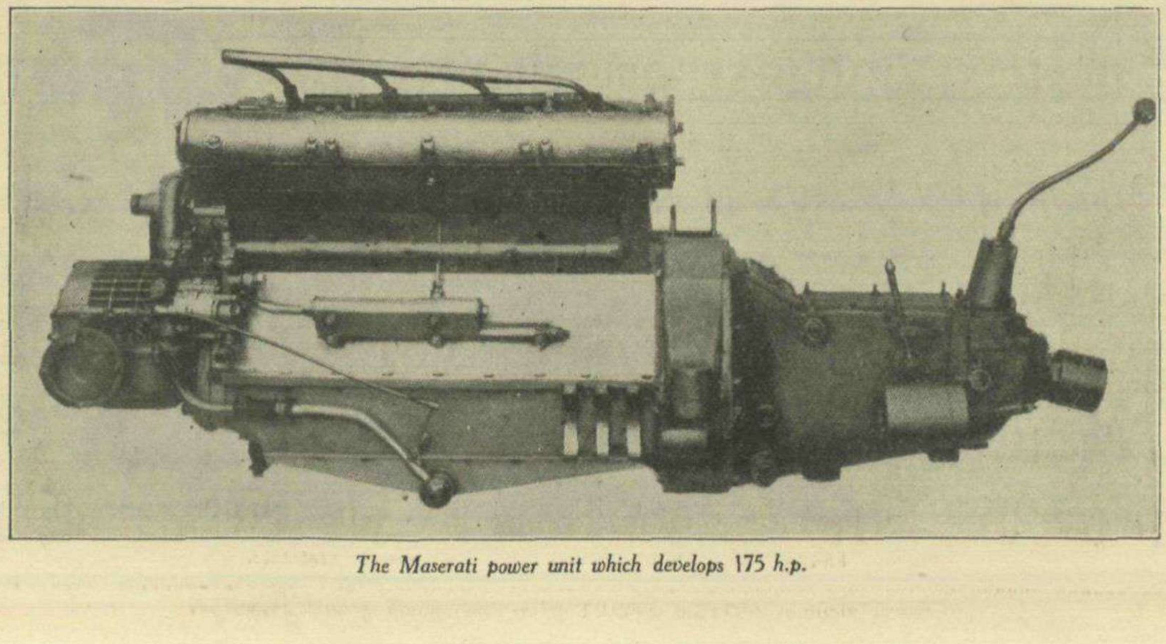
The supercharger is a normal type Roots blower mounted directly at the forward end of the crankshaft which drives it direct, this lay-out assuring the maximum simplicity in the use of the device. The carburetter is a Weber designed specially for use with the supercharger which draws air through the instrument. This arrangement permits of a simple and effective method of lubricating the blower, as a small device is mounted on its carburettor side containing a valve which opens when the suction reaches a certain point and allows oil to reach the vanes and bearings of the supercharger. This valve actually opens when the engine attains about 3,000 r.p.m.

Ignition is by a single magneto with the plugs in the centre of the cylinder head. The equal distribution of the mixture has been very carefully studied and the single inlet manifold has been very accurately designed. The maximum pressure required from the supercharger is 6 metres of water, and a safety valve is fitted which blows off at this pressure in order to avoid the evil effects of the mixture burning back and of excessive pressure in the induction pipe.

At its maximum speed of 6,000 r.p.m., the engine develops 175 h.p. or 70 h.p. per litre of capacity. The clutch is of the multiple-disc type, running dry, with 13 discs, and takes the drive to the 4-speed gear-box, which is built up in unit with the engine. Thence the drive is taken by a propellor shaft enclosed in a torque tube to the back axle. The central casing of the latter is cast of "electron," a special aluminium alloy which has been worked out by the Isotta Fraschini Company, which has undertaken the casting of the Maserati's back axle as well as of various parts of the engine, the gear-box and brake shoes and drums, all of which are made of the same material. The back axle itself consists of five main pieces bolted together, consisting of the two halves of the central electron casing, the two cylindrical steel axle casings, and the steel torque tube which transmits both torque and reaction, and which is furnished at its forward end with a ball joint on the back of the gear-box.

The brake drums have a diameter of 15.68 ins. and a width of 1.96 ins. and are made of electron as are the shoes which are lined with Ferodo. The final ratio varies according to the use to which the car is to be put, and at Monza amounted to 3.69 to 1.

Externally the car is pleasing, being low-built with the sloping radiator now so popular in Italy and elsewhere, and a very short streamline tail terminating in a vertical knife edge. The car in fact looks what it is, a thoroughly workmanlike racer which should have an outstanding performance in the hands of the amateur.



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"BEE-BEE" ASKS—

WHY NOT?

GEORGE believes in doing himself well. He also believes in holding forth to his friends on all matters with which he has any connection, and a good many with which he has none. However, a heavy lunch and some of George's rather special sherry had left me at peace with the world. George is our trials secretary.

"The trouble with trials to-day," boomed George, filling his largest pipe from my pouch, "is that they are too easy."

"When I used to ride a motorcycle we had real trials. Miles of colonial sections, mud simply feet deep, and hills——!" words failed him as he tried to convey an impression of the frightful acclivities which he had conquered.

"What clubs really ought to have for going round those courses is something that will go over anything,—practically amphibian, you know—a sort of light tank, with apparatus for laying dye"——his voice gradually receded into the distance, like a squadron of bombing planes crossing the sky.

* * *

"There you are," said George, "now we can go and choose the course for our next trial in comfort, I've got some good ideas for it."

"I bet you have, but what's this idea for a start?" I asked, indicating the strange device to which George had led me.

"That is my patent go-anywhere motor-car specially designed for clubs to use in laying trials."

The vehicle appeared to be mainly tyres. There were eight of these, fitted in pairs to twin wheels. I looked at the axles; they both looked like back ones, as no steering seemed visible. The body was very small, and perched in the centre of the mechanism. No engine was evident.

"Well, it looks original; which end goes first, and why this sudden boom in rubber?"

"That's the whole beauty of it," replied George, "it goes equally well in either direction, so that it cannot get stuck in a narrow lane. The engine is air cooled, so that it could cross a desert."

"Who wants to cross a desert, anyway?"

"Don't be silly. People often do."

"Sorry, but I don't—often, anyway, as I said before, why all the spare tyres?"

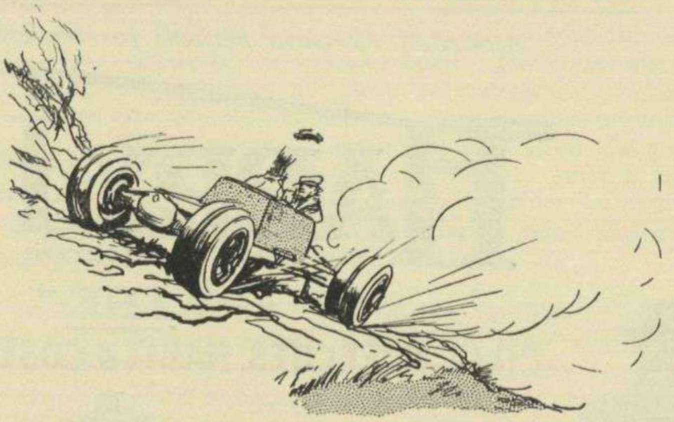
"Those aren't spare tyres; surely you've seen a car with twin rear tyres before."

"All right, but you must break news like this gently. Are all these tyres rear ones?"

"Of course not. I'd explain if you wouldn't interrupt so much. The engine drives all four wheels, so they all have twin tyres. It would go over any surface; you simply couldn't stop it if you tried."

"That's rather awkward. "What if"——

"Shut up! You know what I mean. It is the best drive it's possible to have and it gives such a symmetrical appearance."



"It looks like a spider wearing carpet slippers, if that's what you mean," I replied.

"Very funny, aren't you? But I tell you this is going to be a big thing. I shouldn't wonder if the War Office takes it up. Think of it in places like Africa, where there are no roads."

"There are roads in Africa; I've got a cousin out there, and he tells me,——"

"I mean in the wild, undeveloped country, where there are only savages and things."

"Great!" I said. "The savages could gather round and worship it."

"You've no enterprise," complained George, who seemed to be getting somewhat peeved, "just wait till you've been out in it. Come on and get in."

"Just a moment. It's a small point, I know, but there appears to be no steering. It just has two back axles. How do you manage about that?"

"Of course it's got steering,—very neat, too, as the wheels always follow in track. The chassis is articulated centrally."

"The chassis is how much?" I asked.

"Centrally artic—— bends in the middle, you fool!" he yelled, completely exasperated. "Get in and we'll go."

I complied. The seating seemed reminiscent of a pony trap in which I had travelled when young. We sat facing each other, with the steering column (vertical) between us, and what I took to be the dashboard at one side of us, or relative to the vehicle, at one end of the body, or cockpit, or whatever the thing called itself. The engine, of rather peculiar appearance, occupied the other end. Sundry pedals occupied whatever bit of floor I tried to rest my feet on.

Another glance at the supposed dashboard showed me a fearsome array of knobs and switches.

"Well, George, I didn't know you played the organ before. Why aren't there labels for the different stops?"

He put on a superior air and proceeded to explain in the tone one employs to instruct small children in the mysteries of mechanics. Some of the knobs, it appeared, were to do with the differentials in the two axles. If one wheel spun in soft ground, it could be independently cut out and the drive concentrated on the others. This seemed to make for brighter driving, as you would have to watch the wheels.

By this time we had reached a very sticky piece of going, which we traversed with a sinuous motion, and shortly came on a steep grass slope, up which the device wheezed and clanked, while George played tunes on the knobs.

"What are the pedals for?" I asked.

"Press one and see," he said.

The first pedal produced a loud hissing noise, and glancing round I noticed we were leaving a narrow trail of blue dye, ejected with such force as to leave quite a cloud of powder in the air behind us. I pressed another and the vehicle promptly rose vertically about 4 feet. At least, the wheels remained on the ground, but the centre of the chassis, with all the mechanism, rose, and the vehicle proceeded with its back arched.

"That's for crossing small rivers without getting wet," remarked George.

"Quite," I remarked, trying to appear unmoved and treading on two more pedals, to the accompaniment of more hissing and another cloud of dye, red and blue mixed this time. Another feverish tramp round the floor of the vehicle produced the desired result, we sank once more to our normal position, and proceeded in peace over the battered countryside, getting more and more shaken about as it grew rougher—and rougher——and

* * *

"Wake up and come out, you lazy hound," George was shouting, shaking me violently the while, "we're just off to have a look at next Saturday's course that I was talking about."

"You go by yourself," I replied, collecting myself gradually, and making sure nothing was broken. "I've been."

"What the devil do you mean? You don't even know where it goes."

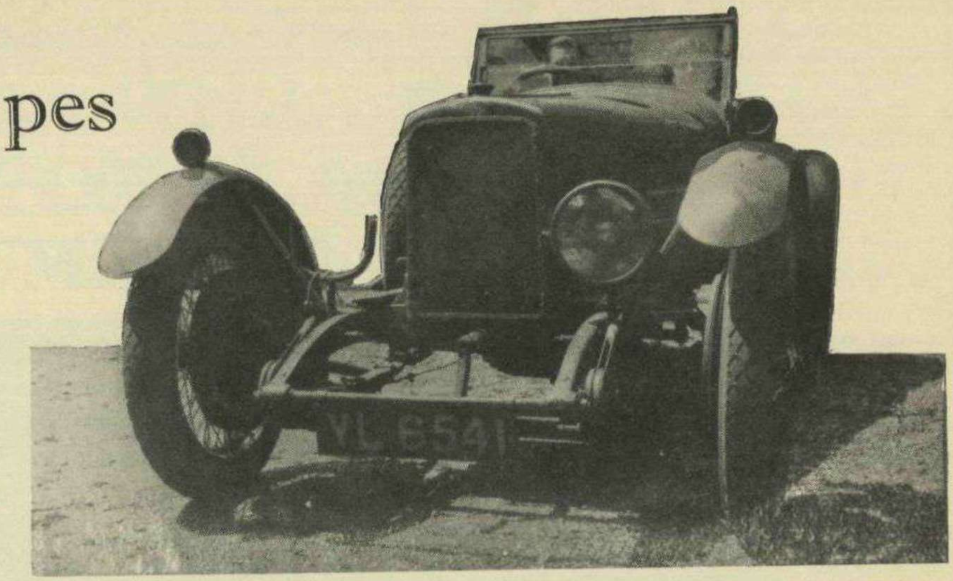
"I tell you I've had enough for to-day."

"The man's mad," said George. "Wake up and come along or it will be dark before we've done anything."

"Oh, all right, have it your own way," I grunted. You see, it's no use arguing with George. "BEE-BEE."

Veteran Types

IV.—REBUFFO'S 1924 COPPA FLORIO ITALA



"E. K. H. K's" own veteran racer, truly a car with a history.

ON the 10th September, 1905, Raggio driving a 100 h.p. Itala, won the race for the Florio Cup at Brescia, covering the 312 miles at an average speed of 65.39 m.p.h. It was the second race which had been run for the Cup and the first of a new series; for, starting from 1905, the donor, Vincenzo Florio, decided that his cup should be competed for seven times, and in the end become the permanent property of the firm which had won it the greatest number of times out of the seven.

Time passed, the war came and went, and at irregular intervals races for the Cup were run off and various victors carried off the palm. At last, by 1924 six different firms had won the Cup, and in that year it was decided to run off a final in which, if any of the six firms proved victorious, it would become the permanent owner of the Trophy. Itala, of course, was one of the six, by reason of Raggio's victory of 1905, and the Italian firm decided that they must run again. In the long interval of nineteen years, however, much had happeend. Other firms had grown and become financially powerful, while Itala had kept on more or less in the old way, just building fine cars in that modest little factory known to all railway travellers to Turin. Since the war the firm had made no attempt to compete in the building of the highly expensive Grand Prix type racers of the day, but had contented themselves with running modified versions of their 3-litre sports model in the Targa Florio.

When, therefore, it came to entering for the final of the Coppa Florio, which was to be run in conjunction with the Targa over the Sicilian circuit, they decided that they would again use something of the same sort which had annexed the 3-litre class prize in 1921 and 1922. It was originally intended to run three cars in the race, but actually only one was ready in time, and this was entrusted to Rebuffo. Thus on the morning of Sunday, 27th April, this driver set off round the Madonie Circuit in a lone attempt to reap the fruits of Raggio's victory of nineteen years before.

It cannot be pretended that in competition with teams of racing cars from the houses of Mercédès, Alfa-Romeo, Peugeot, Fiat, Ballot, Hispano-Suiza and the rest, Rebuffo appeared particularly fast. In fact, he was not in the first dozen at the end of any round, but he completed the five circuits, taking 9 hours 41 minutes and 56 seconds for the journey of 355½ miles, which is an average of 34.6 m.p.h., and faster than the winner's speed over a shorter course in 1919 and 1920. He was placed fifteenth, and thus ended Itala's attempt to gain permanent possession of the Coppa Florio.

A one-time "Blue-Bird."

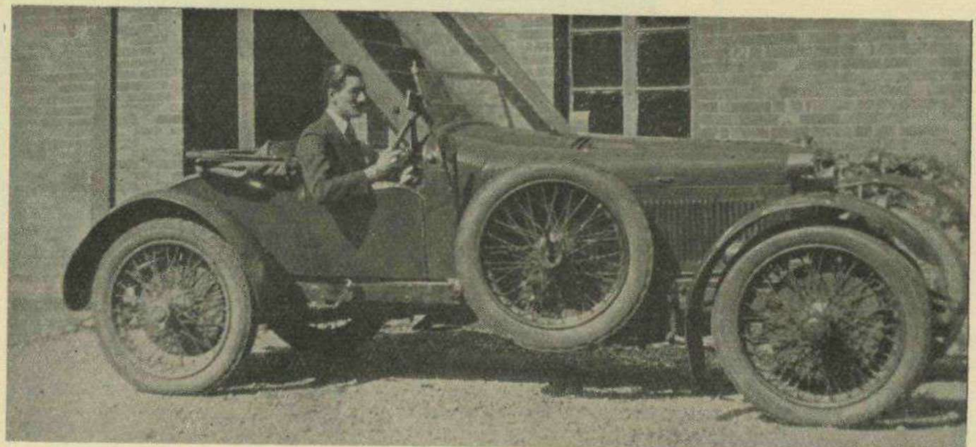
It was not, however, the last chapter in the history of the car. At that time Malcolm Campbell held the Itala concession in England, and some time during 1924 the Coppa Florio car came into his possession. He decided to use it personally, and the motor, robbed of its coat of scarlet paint, became one of the "Blue Bird" series. The car appeared at Brooklands on the occasion of the B.A.R.C. Easter meeting of 1925, and in the hands of its new owner proceeded to win the Founder's Gold Cup Race, averaging 78.05 m.p.h. for the 8½ miles. Thereafter it was a fairly regular appearer at Brooklands meetings that season, though success did not seem to come its way again.

Then for some time I entirely lost sight of the car, except for one short interview with it at, I think, Duxford aerodrome. Apparently in the meantime it was fitted with a 2-seater touring body and sold by Malcolm Campbell. According to its registration book it passed through many hands, but I saw no more of it until one day I met it coming out of the Park at Prince's Gate and was reminded of Rebuffo's Itala, which I had almost forgotten for some years.

It cannot have been more than a month or two after the latter incident that I saw an advertisement for an Itala which I thought must refer to Rebuffo's car. At any rate, I hurried off to see it, and found sure enough the Coppa Florio racer waiting to be sold. Having come and seen, I was conquered, and shortly afterwards I had become the owner of this car, which had once been fairly much in the public eye, but which now seemed completely forgotten.

VETERAN TYPES—continued.

I took over the Itala one black and pouring wet evening on the wrong side of the Brompton Road, the car being fitted with completely smooth headed tyres. Not ideal conditions, it must be admitted, in which to try an unknown car, but by the time I had got across the Park I had already acquired a great confidence in the Itala; and inspecting it critically I decided that even if it was only the best that could be done at the time, it was not an altogether unsuitable car for the Targa Florio.



A side view of the Itala. Despite its seven years it looks extremely well.

The engine is a 4-cylinder side-valve unit, with a bore and stroke of 83 x 130 mm. (2831 c.c.) and side-valves in an L— head. The exhaust valves are surmounted by high caps ribbed for cooling, and the plugs are inserted in passages in the water jacket so that they are directly in the centre of the cylinder head. From the engine a short shaft takes the drive to the 4-speed gear-box, which carries its right-hand lever on an extension independent of the chassis; and from the gear-box a short open propeller shaft drives to the back axle. The wheelbase is short, the track wide and the chassis enormously sturdy, with the radiator and engine set far back. The foot-brake operates in the four very large ribbed drums on the Rudge-Whitworth road wheels, and the long outside hand-brake lever, innocent of ratchet, works a brake on a drum on the propeller shaft, which is capable of locking the back wheels with consummate ease.

Many Gadgets.

It can be seen much more clearly in the photograph than in real life where the old racing body has been cut off just behind the scuttle and the new touring body added. In the process of course the original bolster petrol tank had to be discarded, and one of somewhat inadequate size has been substituted for it between the back dumb-irons, the pressure in which is kept up with a large aero type pressure pump by the luckless passenger. The car has a wonderfully assorted list of accessories which betrays its motley begetting. An enormous Solex carburettor and a Marelli magneto are adjuncts of the engine, the dynamo and switchboard are by Robert Bosch, the horn an English copy of one of his, the one headlamp, which is all that has survived the test of time, is by some unknown Italian maker, and the side-lamps by an equally obscure Englishman. Both the speedometer and rev. counter are Jaegers, but the latter is of the expensive kind which ticks, and the former is not!

However, if its equipment is something of a mixed bag, the car's performance is certainly satisfactory. The flywheel consists of a very light spoked rim which now carries the teeth of the starter gear, and the acceleration is really rather remarkable for a side-valve unsupercharged engine. I imagine that the gear-box is standard, and although the final ratio is high, the car suffers somewhat from the Italian propensity towards providing a first speed which will take the machine straight up the side of a mountain. Once the big change of ratio from first to second has been made, however, the car's get away is excellent, and the rest of the changes are snappy enough. Once top is reached one gets to the full the advantage of the high back-axle ratio which the light weight of the car justifies, and can appreciate the fact that the engine does not have to turn very fast for a good road speed. In fact, its every day maximum under any conditions on the flat is 3,000 r.p.m., which means fairly exactly 75 m.p.h., while with a slight down grade or a following wind or a particularly good mood being displayed by "Musso," as the old racer is usually called, the extra 200 revs. which bring the speed up to 80 m.p.h. can be attained. At this speed the car has all the delightfully tight feel of the thoroughbred, and gives an impression of complete stability, which is assisted by a spring-spoked steering wheel, which is one of the largest it has been my fortune to come across. The maximum speed, as I have already said, is quickly attained, and what was perhaps even more important on the Madonie Circuit, it is quickly lost when those large brake drums start to stop the comparatively light machine.

While, however, Musso has got many of the pleasing qualities of the racing car, he is on the whole as well behaved a motor as the simplicity of his design would lead one to expect. Starting has been really very good, except for a period when pronounced sulkiness in this respect, coupled with perfectly even running, was at last traced to a broken ball-race in the magneto. Of course, I am sure that all chronic owners of second-hand cars will agree with me that each fresh mount one acquires has to pass through a period of being really fractious before it becomes used and resigned to its new owner. Thus, the first time that I took a long journey to the country with Musso, he decided on open rebellion. Coming homewards towards dusk, we were getting along splendidly, when suddenly the boom of the exhaust was broken by unrestrained explosions in the silencer. After the remaining light had been wasted suspecting the valves, it was at length discovered that the vernier

[*Continued on page 127.*

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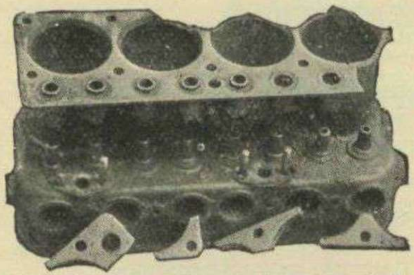
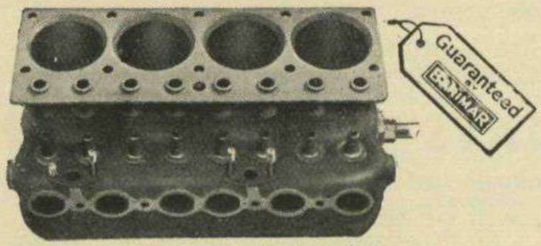
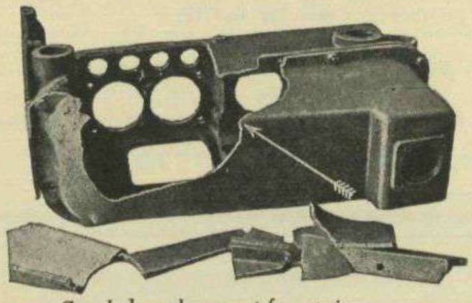


Cylinders sent to Barimar by a sceptical customer who thought them "beyond repair."



Barimar Welded and machined the cylinders to new condition in 2 days. Guaranteed perfect. This customer saved £10 on the cost of a new block of cylinders.



Smashed crankcase sent for repair.

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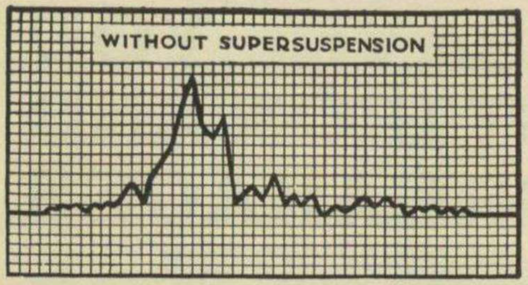

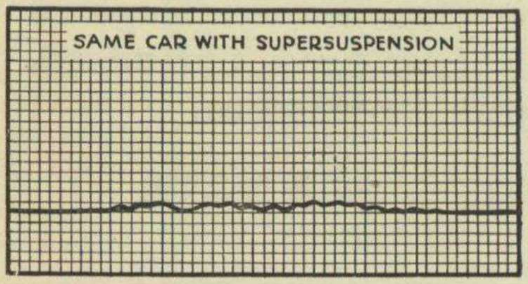

A car was driven over a surface with a big pot-hole at one point. A seismograph was stationed in a nearby building, and the two graphs show dramatically the effect upon the suspension of the car both with and without Super Suspension.

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GREATER COMFORT

It ensures unbelievable riding comfort, lightens your steering, and gives you remarkable control.

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It prevents bounce, body sway, and roll on corners.

NO SKIDDING

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Once fitted, it needs no attention—it is self-adjusting—and guaranteed for three years.

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No alterations to chassis or springs—no screws or bolts.

Immediate fittings arranged at our premises—'phone, call or write.

NOTE **REVISED PRICES FROM 12/6 TO 50/-**

Fitting charges from 10/- to 25/-.
(according to type of car and suspension)

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Is carried out at any of the addresses below, or at head office.

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ASHFORD :— C. Hayward & Son, New St.
BARNET : — C. Bennett, Atlantia Works, 133, High St.
BIRMINGHAM :—Birmingham Garages, Ltd., Suffolk St.
BEDFORD:—Nicholls & Son Ltd., St. Mary's Square.
CHESHUNT:—Mitchell & Walsh, 132, High St.
COBHAM : — Thomas & Taylor (Brooklands) Ltd., Portsmouth Rd.
CHELMSFORD : — Pollards Garages Ltd., Broomfield Rd.
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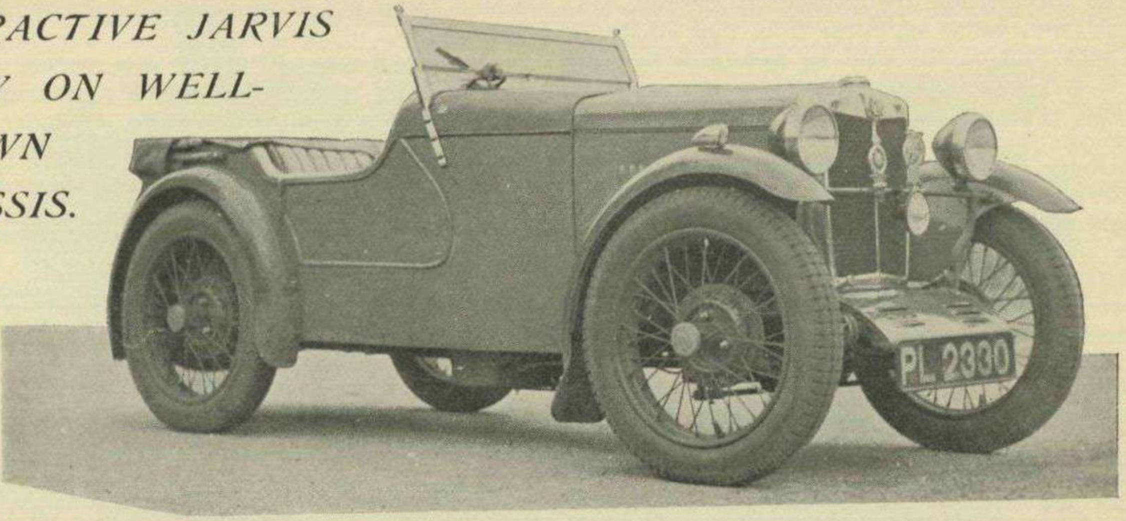
Woodwright

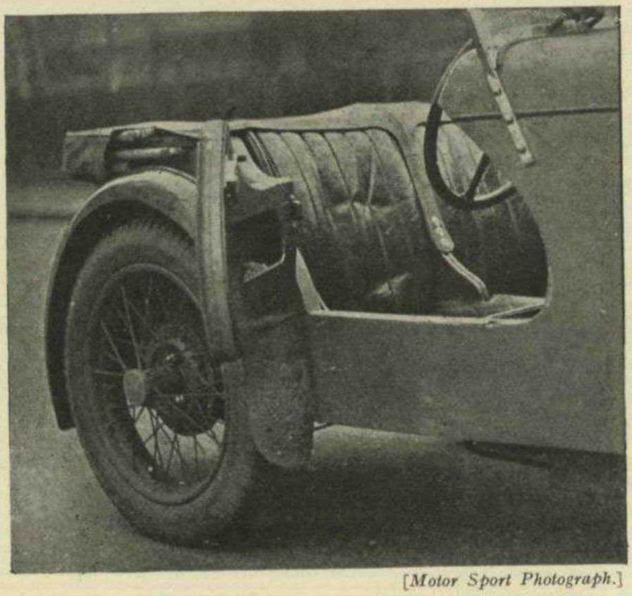
A MODIFIED MIDGET

ATTRACTIVE JARVIS BODY ON WELL-KNOWN CHASSIS.



WHEN a sports car attains popularity with the swiftness of the M.G. Midget, it is good proof of the soundness of its design, especially when this is backed up by success in competitions. This is certain to lead in its turn to a demand among discriminating owners for a model which will be a little different from the general run in the way of coachwork.

Therefore, although the M.G. Midget was no novelty to us as regards the chassis, we found a great deal to arouse fresh interest in the Jarvis Midget which was in our hands for a few days recently. Some coachwork attracts by its appearance, while some depends on its practical and useful lay-out to capture the owner's fancy. This particular model, however, is one of those rare examples which combine real good looks with a maximum of convenient accommodation.



[*Motor Sport Photograph.*]

Convenient. The wide doors on the Jarvis-bodied M.G. Midget.

There are many small sports cars on the road to-day which, while very nice for showing off their owner to advantage on short runs, present considerable difficulties when a long journey is undertaken with any luggage or equipment. Although it must be admitted that there are numbers of sports car owners whose first thought is appearance, and whose journeys rarely extend beyond the main street of their home town, we like to forget them as much as possible, and hope they will decrease rapidly. It is to the normal man, to whom a car means a quick means of getting far afield, that the Jarvis model should appeal. It is, in our opinion, the most practical sports body we have ever tried on a car of this type and size. The actual construction and finish of the body are excellent, as might be expected from a firm who have so long specialised in sporting coachwork, and these may be taken for granted.

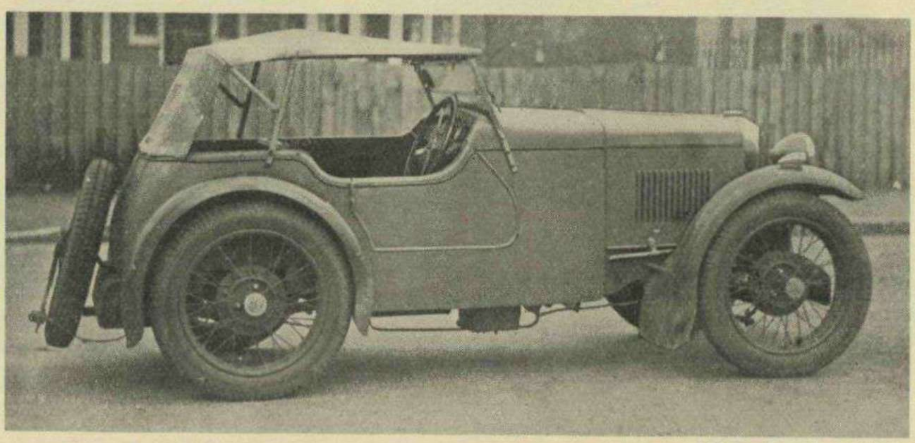
The actual lay-out is a miniature of the short 3-4 seater type which is often seen on 1½ litre cars. In this case the rear compartment is intended chiefly for luggage, although it would be useful on occasion to give a lift to an extra passenger for a short journey. A large inspection door in the floor of this compartment gives convenient access to the rear axle for greasing, etc., while a second flap at the rear opens the tool compartment, which is built under the floor level in the form of a dummy petrol tank. This is of ample size, and, as well as a large tool kit, provides room for those many items of spares and equipment which always seem to accumulate. The only criticism of this arrangement is that if the rear compartment is full of luggage, some of this will have to be removed to get at the tools. This is not likely to happen often, however, and the convenience of a really large tool box makes up for it.

The bucket seats are adjustable over a considerable range, and though in the experimental body we tried there was not really sufficient room for anyone over 6 feet, the leg room is being increased in the production model to remedy this. Pneumatic upholstery will also be included in the standard specification.

A MODIFIED MIDGET—continued.

A neat and really efficient hood is another good point and the lines of the hood are in keeping with the rest of the car. When this is not in use, a combined hood and tonneau cover ensure the contents of the rear compartment, if any, being kept free from dust or damp.

By its behaviour on the road we were able to prove that the weight distribution with this particular body was excellently planned, as the road holding and comfort at speed were really remarkable, and continually gave the impression of a much larger vehicle.



[*Motor Sport Photograph.*]

With hood up or down, the Jarvis-M.G. remains a good looker.

The steering, in common with all Midgets, was very light indeed; in fact, too light for our liking, as we should have preferred rather more caster combined with a somewhat higher gear. At present from full lock to full lock (not a very great angular movement of the front wheels in this case) requires two full revolutions of the wheel. On such a light car a considerably higher gear would still call for no appreciable effort, while when "scrapping" on a winding road it would give a rather quicker and more "live" control. The steering was very pleasant, however, and perfectly steady, while some people may prefer the very low gear.

Although Motor Sport has previously published accounts of the M.G. and its performance, we cannot refrain from again referring to the running of the engine. In addition to its remarkable power for its size, it is one of the smoothest 4-cylinder engines we have ever driven, and feels almost like a six. With suitable attention to the ignition control it will travel smoothly at a walking pace in top gear, while its maximum was 68 m.p.h., at which speed it was quite free from any signs of over-revving.

On second gear, 40 m.p.h. was reached quickly, and this was the best speed at which to change up if maximum acceleration was required, though considerably more than this could be attained before valve bounce occurred at between 45 and 50 m.p.h. With stronger valve springs this would not occur, but it is evident that its most useful range in second is up to 40 m.p.h. And there is no point in exceeding this in ordinary work, as to do so is simply increasing general wear and tear on the engine.

The brakes, operated on all wheels by the pedal, are positive and powerful, and are an improvement on the earlier models of this chassis, making high average speed quite safe. The hand-brake is rather too far forward for convenience, but as this is used chiefly for holding the car when stationary, this small point is of minor consequence.

The job as a whole is well planned and carried out, and is a notable improvement on an already attractive little car. The price with a very full equipment, including side screens, is £225. The makers are Jarvis & Sons, of Victoria Crescent, Wimbledon.

BRITISH CARS IN SOUTH AMERICA

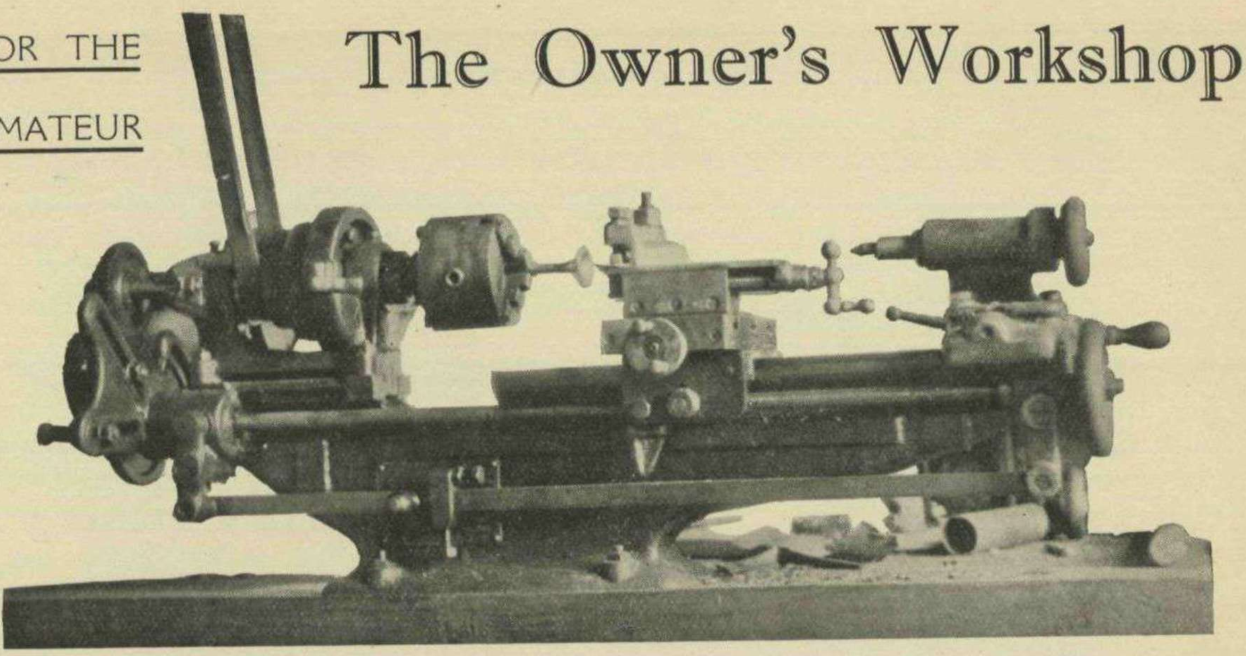
BENEATH the bald statement that nearly a score of British motor manufacturers will be exhibiting at the British Empire Trade Exhibition in Buenos Aires next Spring, there is evidence of an intensive effort to capture a big proportion of the South American car trade.

There are three million inhabitants in Buenos Aires alone, the Argentine Republic has an area of no fewer than 1,500,000 square miles of territory and the annual consumption of cars approaches 100,000. Yet so strong a hold have North American manufacturers obtained in the market that last year only 18 British cars were imported there.

The British motor trade is now making a bold bid to effect an entry, as is shown by the efforts of some of our leading manufacturers. For this Trade Exhibition is not being considered as an Exhibition alone; certain manufacturers are regarding it as the starting point of a sales' campaign in South America. The Singer Co., for instance, has already appointed a factory representative, Mr. M. H. Flash, who has lived in the Argentine for 21 years and is conversant with all the necessary languages and patois. Accompanied by expert Singer mechanics he will shortly be leaving England with a large fleet of demonstration cars, and on arrival at Buenos Aires he will establish offices, showrooms and service stations. He will then appoint distributors and dealers, and organise a sales campaign throughout the country.

FOR THE AMATEUR

The Owner's Workshop



This is the second of a series of articles dealing with the equipment, use and maintenance of the workshop at home.

HAVING equipped the workshop with a bench, vice, and a few other necessaries of life, there is time to look round awhile, before launching forth into erratic expenditure on devices which may or may not assist in the better running and repair of the automobile for whose benefit the whole trouble is being taken. Cars themselves vary so much in their accessibility, to say nothing of their need for repairs, that it will depend greatly on the make which is favoured, what equipment will be necessary when working on it.

Every year shows some improvement in this respect, and it is no longer so common to find cars on which the back axle has to be detached before the engine can be taken out, or on which the gear box has to be dismantled to remove the sump!

Therefore, the best thing to do is to tackle a few dismantling jobs with the equipment already mentioned and get an idea thereby what sort of additions will have to be made to avoid excessive wear and tear on the vocal chords.

Start Right.

Most amateur tuners begin entirely at the wrong end when trying to make their cars better and brighter, and are apt to think that the engine is the only thing that requires tuning; and even then they usually start where they ought to finish. I do not propose at the moment to go into a long harangue on raised compressions, polished ports, etc., but to suggest ways and means for keeping the vehicle in such a condition that it will maintain its original performance with some degree of safety and reliability. This being so, we can consider the ordinary routine repairs, and leave the problems of "hotting-up" till later.

It is remarkable how many owners are perfectly content to work hard on an engine and continue to drive it about the country in a chassis which gets more and more unsafe with every mile covered. Therefore, get in the habit of keeping the chassis up to the mark before bothering about the engine.

Sooner or later the brakes will want relining, but this is the least attention they will need. Modern brake linings have such wonderful wearing properties that they are apt to encourage neglect of the braking system in general. Modern cars have wonderful brakes, provided always that there is a reasonable means of applying them. There are, unfortunately, many things to happen between the pedal and the shoes, in the way of cross shafts, etc., which may be partially seized up, and so give the impression that the brake linings have nearly given up work. Actually, in many cars, most of the pedal pressure is used in overcoming such intermediate resistances, and unless the mechanism is well looked after, the best linings in the world will be useless.

However, when the brakes actually do need relining, there is nothing unduly complicated in the job, as it merely consists of removing the drums, taking off the shoes, fitting the new linings and reassembling. You can always see that on a garage bill for the job, and put like that, it seems too easy! All the same, those simple words may cover much bad language, and a consideration of the more obvious snags may show that the money charged on the said bill has been well earned. Removing the brake drums is the first trouble as a rule, for the simple reason that they must not be liable to come off when running, and are therefore put on to stay put.

In cases where the drums bolt on to the hubs, the job is fairly straightforward, and although requiring considerable strength, needs no special equipment. When the drum and hub are one, and held on to a tapered shaft, it may not be possible to remove them without special weapons, but an attempt can at least be made. Having got the axle firmly supported on a box or block (jacks are too liable to get pushed over to be safe), the hub exposed and the nut on the shaft removed, everything is ready to be removed.

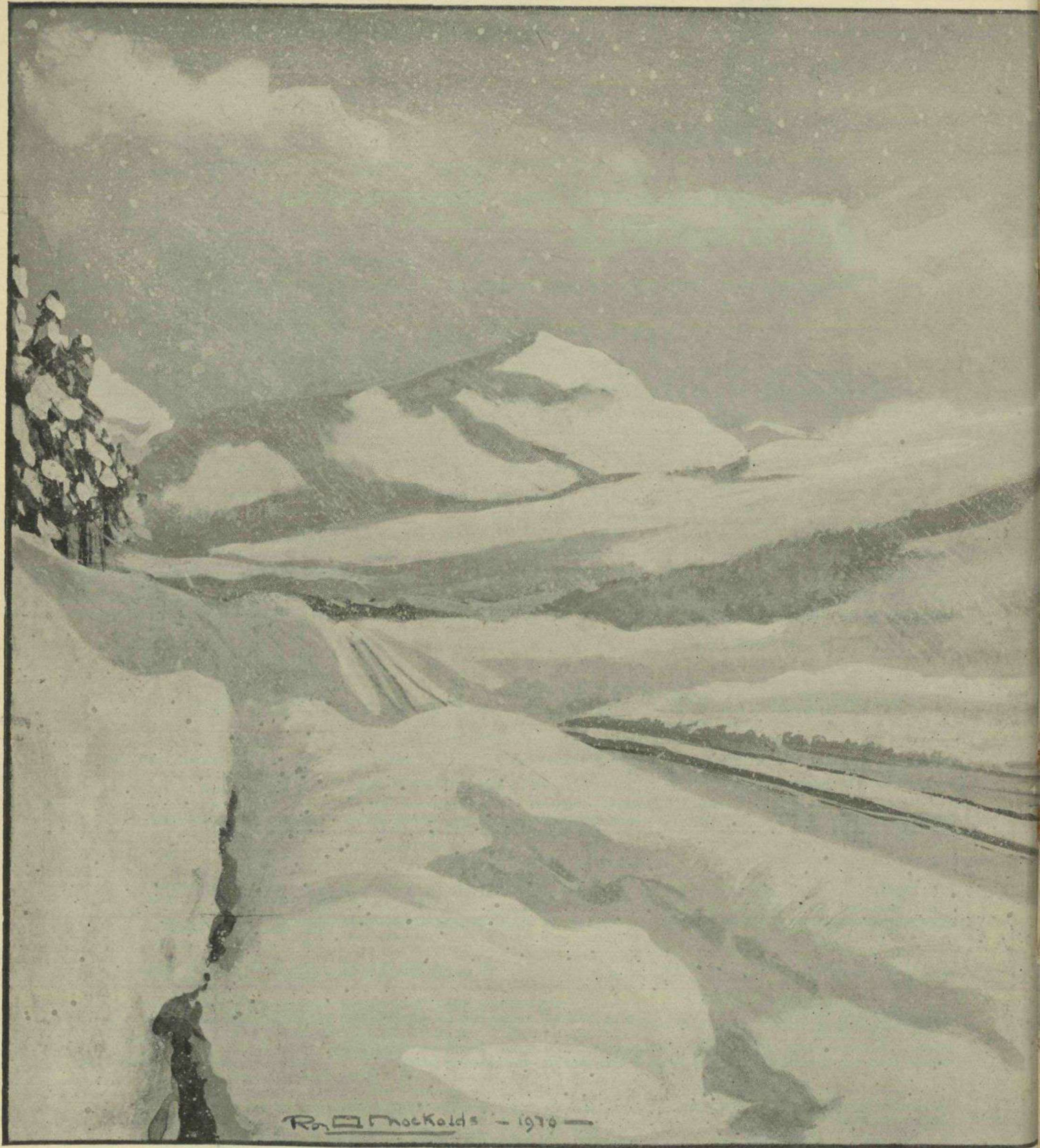
The first method is to get a couple of levers behind the drum and apply gentle pressure, at the same time tapping the end of the shaft with the heaviest hammer available. A piece of lead should be held against the end of the shaft while tapping to avoid damage to the thread.

Removing Shafts.

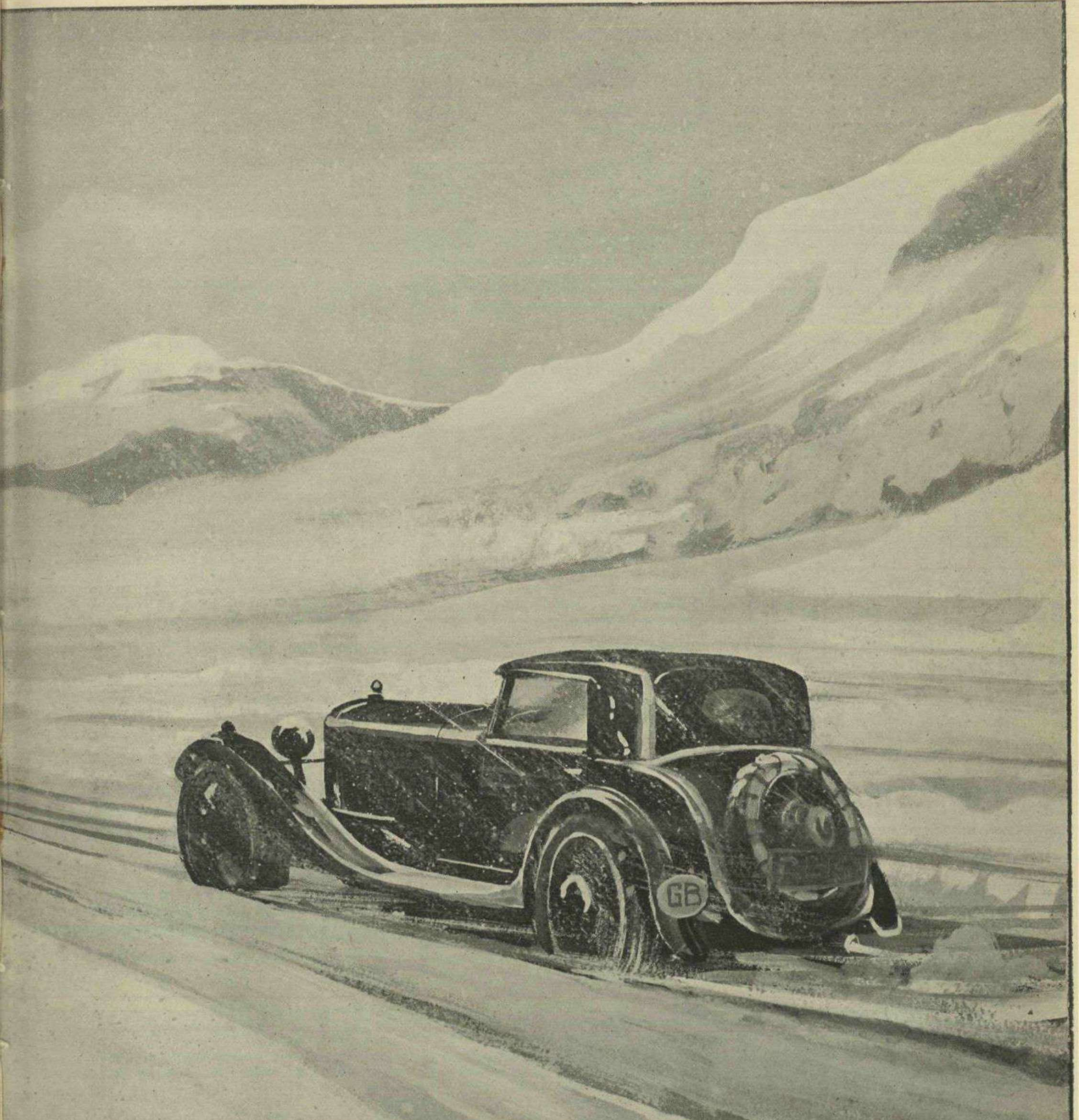
In any case of hitting shafts to drive them through anything, the heaviest hammer should be used that is consistent with getting at the job easily. A small hammer used hard tends to have only a local effect. That is, it tends to spread the end of the shaft instead of moving the whole shaft. A comparatively gentle blow with a heavy hammer will have far more effect, while a really hard hit with a very heavy hammer, although effective enough, requires considerably more skill than at first seems obvious, if nothing is to be damaged. In fact, it might be said that the ability to employ extreme violence without causing any damage, is one of the hall-marks of a good mechanic. The reason for the respective uses of large and small hammers will be obvious to anyone acquainted with the mechanics of momentum and impacts, but these do not much matter so long as the effects are remembered.

Some hubs leave their tapers more easily than others, depending chiefly on

[*Continued on page 126.*


Roy Nockolds - 1930 -

SOUTHWARD BOUND. *In passing through conditions such as are depicted here, Monte*
severe of all mid-

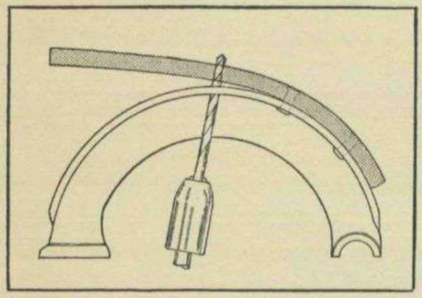


Carlo must seem a long way off to competitors in the ever-popular Rally, undoubtedly the most
inter motoring events.

THE OWNER'S WORKSHOP—continued from page 123.

the angles of the tapers, and on how tightly they were originally fitted to them. If the preliminary skirmish described above fails to get the hub off, it is no use trying a more violent variation of the same treatment, hitting the drum itself. Either of these courses will merely cause damage, probably in the shape of an untrue brake drum.

An increasing number of manufacturers are now including a wheel drawer in the tool kit, but if your model is not so blessed, one can usually be obtained from the works, at a price. It may here be mentioned that the price of this tool appears to bear no relation whatever to the cost of making it, and it may cost anything from three or four shillings to well over a pound, for the simple screw-on variety to suit one hub size only.



A diagram showing the right method of drilling the new lining to ensure the holes registering.

The screw-on type are far the most efficient, and should always be used in preference to those with jaws designed to hook over the part to be withdrawn. These are adjustable, it is true, and for some repair work in a service station, also for pulling sprockets and similar rigid objects, are very useful, but for car hubs are practically useless. If the jaws are used on the drum itself, usually the only possible way, the drum, unless very heavy, will suffer.

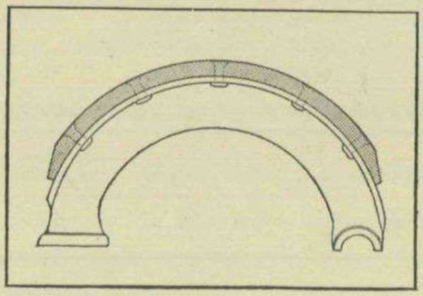
If the makers do not supply a drawer, or the owner does not feel like paying for one, it can usually be improvised with a little trouble. If the car has wire wheels with screw-on hub caps, a good wheel-puller can be made from a spare cap. The normal screw-on puller consists of two parts: the outer casing which screws on in place of the hub cap, or on a thread on the hub specially provided, and a bolt which screws through the centre of this and presses against the end of the shaft. The hub cap provides the basis of one half, while a large bolt for the other part can be purchased quite cheaply. It is worth getting a special bolt of high tensile steel, as a soft bolt may easily bend under the stress.

I have seen various home-made hub drawers of this type, and the usual failing has been the insufficient thickness of the cap, with the result that when it is drilled and tapped, the thread is not deep enough, and strips. To drill and tap it alone is not enough. It should be drilled, and a nut of the correct size brazed in position in the centre of the cap, on the inside. If about a ¾" bolt is used, this should make up a tool which will do as well as the works variety. If the works job costs only five or six shillings, it is not worth making up unless the owner can do the complete job himself, but if the cost is much more than this, it will be a good saving, even if the job has to be done outside.

If the wheel is held by three or five studs, and the wheel is on its own hub cap, as is the case with many wire wheels to-day, not much can be done in the way of improvisation, but if it is an artillery wheel with a cover also held on by the studs, a puller can be made in the same way as before, only substituting the cover for the hub cap. If the cover is only thin sheet, this will, of course, be no use, but some makes are quite strong enough to be used as suggested.

With modern cars, splined shafts are being used extensively for securing hubs, and in this case there is never likely to be the grim struggle which sometimes occurs when a hub and its taper take a particular fancy to each other. Hub-drawers may still be required, but are not so likely to be over-strained.

Hubs are far from being the only things which have to be pulled off their shafts, and many cases may arise where there appears to be absolutely nothing short of dynamite which will move things. As the control of dynamite is somewhat difficult, we must turn to more prosaic methods, and I have often wondered why so many people fail to realise that in the humble jack provided with the car there is a weapon of immense power with many uses other than lifting the vehicle; that is, providing the jack is a good one, and not one of the wretched affairs which sometimes appear in the tool kits of cars which one comes across occasionally.



By drilling at a slight angle, the lining can be rivetted up and held tightly on the shoe.

Recently I was confronted with a back axle which required a new crown-wheel. Having duly removed it from the car and removed the hubs (a puller was available) I started to dismantle it. It was of the split casing type in which each half slides off over the shafts after the bolts are removed from the joint. At least that is the general idea, but in this particular case the bearings at the outer end of each road shaft had become as one with the shaft itself. The car's wheel drawer had done its work, but it could only tackle one job, and this was not it. Obviously a special weapon was required, as this particular piece of stickiness is, fortunately, a fairly rare occurrence.

A Satisfactory Makeshift.

After a certain amount of attention with such weapons as lay to hand, a device was constructed. This consisted of heavy straps embracing substantial portions of the end of the axle casing with one end, and supporting the base of a jack with the other, what time the top of the jack pressed against the end of the axle shaft. The straps consisted of four half-inch steel rods threaded and fitted with two nuts each end, and passing through cross pieces of very heavy angle iron. One pair of these supported the base of the jack, while the other pair went behind suitable bosses on the axle casing. Naturally, in a makeshift job of this kind a certain amount of wangling is required, but by suitable adjustment of the nuts the improvised wheel drawer was squared up and pressure applied in the usual manner, but with considerably increased power. The mistake was made at first of using a simple, light jack, and the very high pressure reached merely burst the base of it. The ball races in question were secured to the shafts with the rust of ages, a state of affairs which should not occur on a properly maintained vehicle. The substitution of a heavy double-lift jack for the first effort, and the use of a turning bar 3 feet long in place of the usual handle, produced the desired result.

The pressure exerted may be imagined from the fact that a jack which will lift half a ton with a turn of the wrist required a man's full strength on the lever used to move the shaft. The above is rather a digression from the subject of relining brakes, but is given as an example of the cheap and homely methods which may be applied to refractory fly-wheels and other parts, in the absence of more specialised tools. No one would maintain that the treatment is likely to do the jack any particular good, but in the case of a screw type jack it will not do it any harm, if a certain amount of discretion is used.

Once the brake shoes are exposed, by fair means or foul, and cleaned, the actual relining is simple enough. The old rivets can be cut and punched out of the shoes quite easily, and the new linings applied. Obviously the one real essential is to make the lining lie absolutely flat on the shoes, as if it tends to "hump" between the rivets it will be impossible to get good braking. If you can get ready cut and drilled linings, and Ferodo now make up sets of die-pressed linings for nearly every make of car, it is almost impossible to go wrong. If, however, the lining is not drilled, a little more care may be needed. Start at one end of the shoe and drill and

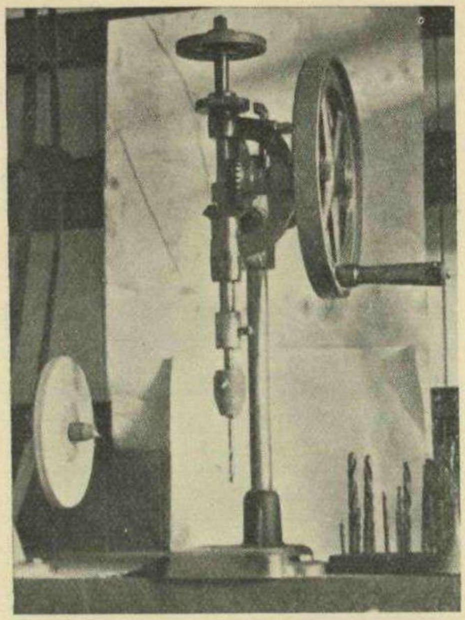
THE OWNER'S WORKSHOP—continued.

countersink the holes, and then rivet this end before drilling any further holes. The next set of holes along the lining can then be drilled, using the holes in the shoe as a guide. If the drill is used at a slight angle it will ensure the lining being stretched tight. By drilling and rivetting round the shoe there will be no errors due to attempting to mark and drill all the holes in the lining before fitting.

Final Touches.

In the actual rivetting some suitable support for the rivet head is needed, and a punch or small chisel, held in the vice with the handle upwards, will be found convenient for supporting the head of the rivet, while the lower end is spread over with a *light* hammer. When the lining is fitted, the ends should be bevelled off with a file to about half the original thickness. This ensures a good lead for the braking surface and makes for smoother and more even braking.

In the operations outlined in this article some items of equipment not included in the simple tools mentioned in the first article of this series will be required. A bench drill was included in these, but a hand or breast drill (quite a light, cheap one, will do) must be added for such jobs as drilling the brake linings. The manufacture of improvised wheel drawers will not be possible without taps and dies of suitable size for cutting the threads required. As these make possible so many other jobs in connection with a motor car, to say nothing of truing up threads damaged in dismantling,a good set is worth getting, at least in sizes up to ½-inch. Most cars employ both B.S.F. and Whitworth threads, but some manufacturers are coming down to B.S.F. as standard. This, being a finer thread, is stronger and less liable to vibrate loose.



A bench drill, such as that shown above, is a tool for which the amateur mechanic will have constant use.

With careful usage, and a sharp eye on friends who wish to borrow them, these items will last almost indefinitely, while if the cost of a complete set appears too much, they can be acquired singly. This method is more expensive, however, and the danger of losing parts, much greater than if they are in a case.

To keep drills O.K.

Another item which is necessary to keep drills in condition is a grinding wheel. A hand grinder, of good make, will suffice, but the convenience of a small electric grinder is very great. A small polishing motor of about ⅛ h.p. with a suitable emery wheel mounted on the shaft, makes an excellent instrument, and the first cost will never be regretted. It can be used for scores of different jobs.

W. S. B.

[*A further article of this series will appear next month.*]

VETERAN TYPES—continued.

coupling of the magneto had jumped a tooth or two, leaving no sign that it was not quite tight. Not content with this piece of fooling, shortly after we had got going again Musso proceeded to get no more petrol; and lengthy investigation in the dark finally diagnosed that the petrol pipe had broken off inside the petrol tank. As no one could be found to braze it on again at that time of night, Musso thus managed to avoid getting home till next day; since when he has decided to reform and behave like a little gentleman.

Tamed and Trustworthy.

Day in, day out now, one can start up one's touring 2-seater and set off on whatever business is on hand; and as one gets away and the boom of the exhaust, escaping through its small expansion chamber and enormous fish-tail reverberates behind one, realise that one is at the wheel of a racing car. You may not be capable of more than an ordinary sports car of to-day's performance, Musso, but you have that indefinable something that tells one that you are the scion of a nobler line than most. Something in the manner of your running speaks of Signor Raggio's thunderous progress on the 100 h.p. at Brescia; of Cagno hurling his machine round the Sicilian circuit to victory in that Targa Florio of 25 years ago; of Moriondo on the big rotary valve car, racing in the Grand Prix of 1913 and finishing second on the same car in the Targa Florio of 1919; and lastly, of your own lone effort now nearly seven years ago under that same Sicilian sky: something in the order of your going tells one that these deeds were not in vain.

E. K. H. K.

A VETERANS CAR CLUB.

As the result of conversations after the recent highly successful London to Brighton Run, an effort is now being made to get going a really good Club, the membership of which is to be limited to owners of cars built before the end of 1904. The chief object of the club is to save its members much of the rather large expense which is at present attendant on the running of a veteran car, and besides this it is intended to organize a whole series of competitions for aged motor cars during each year, including a hill-climb and a flying lap race at Brooklands during one of the meetings. These events will of course be in addition to the "round the mountain" race which already takes place at the Brooklands August Bank Holiday Meeting, and the London to Brighton Run organised by the R.A.C. Owners of veteran cars who are interested in the proposed club should apply to Mr. J. H. Wylie, of 38, West Cromwell Road, Earl's Court, London, S.W.5., who is acting as Secretary.

Others also who are not at the moment in possession of a veteran but who would like to acquire one would be equally well advised to apply to the same quarter as one of the objects of the club is to put prospective owners of veterans into touch with those who have ancient cars for sale. Already considerable interest has been aroused in the proposed club, and it seems certain that by this means enthusiasm for the cars built in the early years of the motoring era will be kept alive, and the veteran machines which have survived in this country will be preserved not as lifeless museum specimens but as real motor cars still tracing out the routes of their early triumphs and failures.

LONDON TO BRIGHTON

How fifty-one veteran cars set out for Brighton and only three fell by the wayside.

HALF-past-eight on a rather cold winter's morning. Imagine a large, low-roofed garage, lit by a somewhat occasional electric light, and in it more than fifty motor cars, none of them less than twenty-six years old, and all of them being started up to take the road again. On every side men were swinging wildly at stubborn engines, or with their heads inside bonnets or under seats attempting to effect last minute adjustments. Every now and again there would break out a crescendo of chuggings as a "single" got going, the "turf-turf" of a really old gas-engine type motor starting up, or the collossal racket of one of the powerful 4-cylinder early Nineteen Hundred machines. Most of us had either lubricated the motors thoroughly against the fatigues of the coming journey, or had not quite mastered the correct mixture-setting of an early carburettor, with the result that the air was thick with blue or black smoke, and the fumes had to be smelt to be believed. Crews rushed about with tins of petrol or talked vociferously above the din, and every now and then out of the smoke of battle there would appear a monster of the past lurching its way towards the exit, with up aloft mysterious figures swathed in untold quantities of clothes.

With Big Ben in the background, A. J. Edmunds' 1903 Wolseley passing over Westminster Bridge.

Fifty-eight Entries.

Such was the scene on the morning of Sunday 23rd November at Henlys' Service Station in Glasgow Terrace near the Embankment on the occasion of the start of the London to Brighton Run organised to celebrate the Thirty-fourth anniversary of Emancipation Day. The cars, of which no less than 58 had been entered, had assembled on the Saturday, most of them arriving in pouring rain, with their drivers wondering whether tomorrow was really going to be quite such good fun as they had hoped. The scene on Saturday afternoon was in fact almost as amusing as that which followed it on Sunday morning. Some of the crews were carrying out fairly extensive adjustments and last minute alterations, S. C. H. Davis and his mechanic appearing very busy with the Léon Bollée, which is as smart as ever and has rather incongruously modern looking number-plates. R. O. Shuttleworth, of course, succeeded in causing a considerable excitement by getting an enormous flare going while he attempted to light the tube ignition burners of his latest acquisition, an 1896 Daimler waggonette. However, the fire subsided, and he was left lamenting that he had five cars there and none of them would go, a statement which was satisfactorily falsified on the morrow. Cars kept arriving all the time of course, and E. Martin thundered in on the big Mercédès with a scream from the exhaust whistle, what time the Star Dogcart, number 12 was left ticking over incredibly slowly, the cup greaser on the big-end of its exposed connecting rod clearly visible as the motor "turf-turfed" comfortably below the back seat.

Soon most of the cars had arrived, and we noticed among them many old friends and some newcomers to the Brighton Run. The 1903 Riley tri-car caught one's attention as resembling closely a Bollée, although it is distinguished sharply from the earlier French machine in the possession of a really useful looking steering wheel, a similar feature being noticeable in the case of the M.M.C. Dog Cart. It is curious in fact that the majority of the earlier veterans fall into three fairly well-marked types, which may be described as the Benz type, with the engine at the back and belt and pulley transmission, the Panhard type, which was destined to be that of the future, with the engine in front and the sliding pinion gear-box, and the Bollée type, which is entirely distinctive.

Nine o'clock on Sunday morning came at last, and the first car, G. J. Allday's 1894 Benz chuffed to the exit from the garage and was despatched on its journey to Brighton. F. S. Barnes' Bollée followed, but R. O. Shuttleworth's Daimler, with the owner at the tiller got a bit restive near the door and nearly succeeded in demolishing both the latter and the Bollée before it was successfully coaxed into the street. One by one, however, the cars emerged into the open, until at last fifty-one had started. E. E. Duncan's 1900 Cyclon three-wheeler and R. C. Blake's 1897 Daimler, however, obstinately refused to get going for some time, while non-starters consisted of G. H. Pruen's Daimler of the same year, B. J. Smyth-Wood's 1899 Renault, F. H. Pearse's 1900 Benz, Miss E. Brown's De Dion of the same date, F. Ibbetson's 1901 Renault, G. Burtenshaw's 1902 De Dion, and G. Dugdale's 1904 Renault.

Emerging from the garage we turned sharply into the street to meet a thick crowd of spectators who only parted just in time to permit of the passage of the car. One was irresistibly reminded of the same thing which used to confront competitors finishing in the great town-to-town races of the old days, although they had to drive into the crowd at 60 instead of 6 m.p.h.! However, we got clear of them and swung onto the Embankment which was nearly deserted. We soon passed the 1901 Panhard et Lavassor "Papillon Bleu" which was early in trouble, and soon afterwards came upon R. O. Shuttleworth's 1900 Peugeot, whose driver, K. M. Miller, was vainly endeavouring to find top gear. A short detour brought us to Westminster Bridge, and then the crowds began again in earnest. From there all the way out of London the pavements were lined with enthusiastic spectators, and as one crossed the cross roads with all the traffic held up for one, one felt that one might have been part of a royal procession or the Lord Mayor's Show.

Those Modern Cars.

On over the tramlines we went with none of the other competitors in view. Then we came upon Shuttleworth's 1897 Panhard et Levassor, once Réné de Knyff's Paris-Amsterdam racer, and later Lord Rothschild's brougham in which King Edward travelled to Ascot, stopped by the roadside having been most unfortunately eliminated by a collision with a modern car. Soon in fact the modern cars on the road began to become a most unmitigated nuisance. The pedestrians kept well to the side of the road and everyone seemed willing to lend a helping push to an old motor which was beginning to falter. Drivers of modern cars, however, many of them typical week-end incompetents and others who ought to have known better did their very best to hinder by cutting in on the veterans and then stamping on 4-wheel brakes, a manoeuvre which the old cars' drivers found its ingularly hard to counter. We could not help being saturninely pleased

LONDON TO BRIGHTON—continued

later to see one of the worst offenders hopelessly ditched after a minor collision with another modern car.

Meanwhile Brixton Hill was proving the first real obstacle to the earlier cars, although R. Hope-Johnson on Shuttleworth's racing De Dietrich of 1903 went by at a speed which showed that the big veteran took less notice of the hill than many of the modern cars, and which soon took him to the head of the procession. The hill actually stopped no one permanently, and all the cars successfully debouched onto the Croydon bye-pass. Here the traffic was thicker than ever, and on the hill going up to Croydon Pridge our own car got stopped in a block, and refused to restart on account of clutch-slip until the passenger had given a helping hand.

A Glorious 20 m.p.h.

Once out in the country, however, everyone began really to enjoy themselves. The rain of Saturday had been blown away by the night's gale, and Sunday was a brilliantly fine winter's day, cold but sunny. The country side looked glorious from the high seat of a veteran car, and 20 m.p.h. had all the thrill of sixty.

Purley, Merstham and Redhill had turned out in force to watch the old cars go through, and then we swung right to Reigate, and as we passed through the crowds in that town, we wondered rather apprehensively what was going to happen on Reigate Hill of which many tales of terror had been told before the start. Actually however everyone climbed the long grade successfully, rather to the disappointment of the large crowd of spectators who had assembled to witness the death gurgles of the veterans, but who had to be content with a few really shrieking gear changes. Crawley provided more crowds which lasted on all the way up the long climb to Handcross, which was successfully negotiated, the steep descent from the village on the other side proving considerably more exciting for some of the competitors whose mounts succeeded in running away somewhat and causing considerable skill being demonstrated in high-speed tiller steering control.

Just short of Bolney our own Number 33 De Dion had to stop for repairs to the water pump, while H. C. A. O'Rorke came along on a 1904 15 h.p. Darracq, boiling furiously.

Getting away again we came upon G. de Havilland in the 1903 Decauville, going well while one of his passengers was " shooting " other competitors with a Baby Cine from the tonnaeau. Then on up the last long hill, Patcham, and at last Brighton. Through cheering crowds we swung to the left by the sea, climbed one last hill and turned into the Aquarium garage. Each car as it arrived was surrounded by a swarm of enthusiastic spectators who clung on to it from every side with the result that arriving at one's appointed parking position was a matter of extreme difficulty. Then at last the gear lever was pulled into neutral, the motor gave a few dying gurgles, and one descended.

Some of the younger and more powerful cars, of course, had proved themselves easily faster than their earlier ancestors. R. Hope-Johnson on the 24 h.p. racing de Dietrich, although starting after some forty other cars had arrived first in Brighton, closely followed by A. H. R. Fedden's 1903 18-28 h.p. Mercédès, which was painted red and which looked in wonderful condition. E. Martin's big 60 h.p. Mercédès had also come down well, although starting late, and of the earlier cars Davenport's 1899 Progress voiturette had made a very good time and confirmed its success in the Brookland's veterans' race on August Bank Holiday. Among the others of the Nineteenth Century brigade, F. Harvey's 1898 Vipen had gone extremely well, and a good time had been made by S. C. H. Davis' Bollée

Some of the others however, had not fared so well. The 1902 Durkopp driven by C. A. Jefford appeared soon after lunch, but not under its own power, being pushed up the last hill to the Aquarium Garage by its tired but determined crew of three and some willing spectators. It appeared that it had suffered from a whole legion of troubles in the water circulation system, which necessitated plugging leaks with pieces of wood from a camera film spool, a cork from a medicine bottle and various other objects. Then the pump drive sheared, and the system had to be connected up to thermo-syphon, while one of the passengers stood up in the front seat and emptied cans into the water tank. Thus the car actually reached Brighton, where one of the gentlemen described above driving a modern car proceeded to cut in on it and then stop dead. So did the Durkopp and so did its motor, which nothing would induce to re-start, the valves being mostly burnt out. So it had to be pushed.

The Finish

Thus one by one the cars arrived, all except No. 5 Panhard et Levassor, already mentioned, the Cyclon and R. C. Blake's Daimler which had never got going satisfactorily. Last of all as darkness was falling, O. R. Shuttleworth's monstrous Daimler appeared being pushed up the hill to the finish by an enormous body of enthusiastic helpers.

Then we all repaired to the tea given by the R.A.C. and were presented with a certificate stating the time and average speed set up by our veteran, a thing which will long be kept as a reminder of as fine a day's sport as anyone could wish for—even if our speed was only in its " teens." The official times and speeds of the cars were as follows ; that of the De Dietrich was under-estimated by half an hour by several London papers which was a pity, as inaccuracies of this sort only give a wrong impression and encourage the quite erroneous idea that this event is a town to town race.

1894 Benz (G. J. Allday), 3h. 59m. 0s., 14.37 m.p.h. ; 1896 Léon Bollée (F. S. Barnes) 5h. 45m. 10s., 9.95 m.p.h. ; 1896 Daimler (R. O. Shuttleworth) 7h. 8m. 30s., 7.10 m.p.h. ; 1897 Léon Bollée (S. C. H. Davies) 3h. 20m. 0s., 17.17 m.p.h. ; 1897 Panhard-Levassor (P. Hawker), retired ; 1897 Daimler (non-starter) ; 1897 Benz (Mrs. M. Miles) 4h. 48m. 35s., 11.90 m.p.h. ; 1897 Benz (E. G. Blake) 3h. 34m. 30s., 16.01 m.p.h. ; 1897 Daimler (R. C. Blake), retired ; 1898 Benz (C. S. Burney) 4h. 59m. 5s., 11.48 m.p.h. ; 1898 Vipen (F. Harvey), 2h. 59m. 50s., 19.10 m.p.h. ; 1898 Star Dog Cart (F. S. Rowden), 4h. 56m. 30s., 11.58 m.p.h. ; 1898 Stephens (R. Stephens), 3h. 57m. 10s., 14.49 m.p.h. ; 1898 M.M.C. Dog Cart (E. G. Bromhead) 3h. 57m. 0s., 14.50 m.p.h. ; 1898 Daimler (D. M. Copley) 4h. 16m. 30s., 13.42 m.p.h. ; 1899 Renault (Non-starter) ; 1899 Progress Voiturette (M. E. Davenport) 2h. 14m. 15s., 25.58 m.p.h. ; 1900 Clement (R. B. Taylor) 6h. 40m. 45s, 8.57 m.p.h. ; 1900 Benz (non-starter) ; 1900 Peugeot (K. M. Miller) 5h. 22m., 10s., 10.66 m.p.h. ; 1900 Wolseley (Mrs. Shuttleworth) 4h. 45m. 0s., 12.01 m.p.h.; 1900 Cyclon (B. E. Duncan), retired ; 1900 De Dion (non-starter) ; 1900 De Dion Bouton (C. Pritchett) 3h. 20m. 5s., 17.17 m.p.h. ; 1900 Peugeot Voiturette (S. G. Cummings) 2h. 43m. 40s., 20.98 m.p.h. ; 1900 Renault (F. Stannard) 3h. 32m. 10s., 16.19 m.p.h. ; 1900 Fiat (Sir M. Monson) 2h. 41m. 30s., 21.27 m.p.h. ; 1901 De Dion (W. Keppel), 2h. 56m. 50s., 19.42 m.p.h. ; 1901 Renault (non-starter) ; 1901 Oldsmobile (V. Balls) 4h. 15m. 30s., 13.47 m.p.h. ; 1901 Panhard (P. R. Moore) 5h. 1m. 40s., 11.39 m.p.h. ; 1902 De Dion Bouton (E. K. Karslake) 3h. 36m. 5s., 15.90 m.p.h. ; 1902 Gladiator (C. Holbeach) 3h. 56m. 40s., 14.51 m.p.h. ; 1902 De Dion Bouton (P. McEntee) 3h. 52m. 40s., 14.76 m.p.h. ; 1902 De DionBouton (G. A. Mangoletsi) 3h. 27m. 15s., 16.58 m.p.h. ; 1902 Daimler (H. C. Butterfield) 2h. 37m. 10s., 21.85 m.p.h. ; 1902 De Dion Bouton (non-starter) ; 1902 De Dion (J. Risbridger), 4h. 30m. 50s., 12.07 m.p.h. ; 1902 Durkopp (C. A. Jefford) 5h. 12m. 15s., 11.00 m.p.h. ; 1902 Panhard (J. A. Turner) 2h. 56m. 40s., 19.42 m.p.h. ; 1903 De Dietrich (R. Hope-Johnson) 1h. 53m. 50s., 30.17 m.p.h. ; 1903 Siddeley (C. Siddeley) 2h. 35m. 10s., 22.13 m.p.h. ; 1903 Riley (F. J. Rogers) 2h. 40m. 5s., 21.36 m.p.h. ; 1903 Mercédès (E. Martin) 2h. 14m. 15s., 25.58 m.p.h. ; 1903 Cadillac (G. Burtenshaw) 4h. 25m. 0s., 13.00 m.p.h. ; 1903 Thornycroft (T. Thornycroft) 2h. 26m. 30s., 23.44 m.p.h. ; 1903 Wolseley (J. H. Wylie) 2h. 40m. 25s., 21.34 m.p.h. ; 1903 Rover (R. V. Price) 3h. 19m. 30s., 17.22 m.p.h. ; 1903 Decauville (G. de Havilland) 3h. 45m. 15s., 15.25 m.p.h. ; 1903 Mercédès (A. H. R. Fedden) 2h. 3m. 55s., 27.72 m.p.h. ; 1903 Oldsmobile (K. Kirton) 5h. 44m. 0s., 9.98 m.p.h. ; 1903 Cadillac (F. S. Bennett) 4h. 2m. 30s., 14.17 m.p.h. ; 1903 Lanchester (Lord Ridley) 2h. 37m. 15s., 21.84 m.p.h. ; 1903 Wolseley (A. J. Edmunds) 2h. 56m. 50s., 19.42 m.p.h. ; 1904 Renault (G. Willeby) 2h. 28m. 10s., 23.19 m.p.h. ; 1904 White Steamer (F. C. White) 3h. 58m .45s., 14.38 m.p.h. ; 1904 Rolls Royce (Sir J. Prestige) 3h. 27m. 0s., 16.60 m.p.h. ; 1904 Renault (non-starter).—E.K.K.

Club News

M.C.C.

THE annual dinner and dance of the Motor Cycling Club was held at the Connaught Rooms, Great Queen Street, London, on 29th November last. The function, which attracted a large number of members and guests, was highly successful, and the programme included the M.C.C. film and a cabaret show.

LIGHT CAR CLUB.

With the Earl of March in the chair, a most successful dinner and dance was held by the Light Car Club in Kensington recently, to mark the close of the club's past season. Many prominent people associated with the sport were present, and these included Captain Waite (now happily recovered after his Ulster crash), Professor A. M. Low, Mr. T. W. Loughborough, Mr. S. C. H. Davis and Mr. L. Dyer. Following the dinner, the prize distribution took place, the awards being presented by the Countess of March.

"SUNBAC."

The Murratti Ariston Trophy, the championship award of the Sutton Coldfield and North Birmingham Auto Club has gone to F. Cope, who competed in every single event held during the 1930 season. The runner-up was J. Orford.

DOLPHINIAN M.C.C.

On Saturday, November 22nd, the club held its second annual dinner at the Corner House, Portsmouth, followed by the presentation of awards gained in the 1930 season.

Owing to Lieut.-Commander Jameson's being engaged on official duties at Barrow, the presentation was carried out by Lieut - Commander Maguire, of the Submarine Base, Gosport, to whom a vote of thanks was accorded.

Dancing continued until midnight, music being provided by the Dolphinian Dance Band.

For the benefit of Naval and Marine motor-cyclists stationed at home ports other than Portsmouth, branches of the Dolphinian M.C.C. are being formed at Chatham, Devonport and Portland. The branch officials to whom inquiries should be addressed are as follows :—

Chatham : J. W Hill, Ldg Sea., R.N.B., Chatham.

Devonport : R. McArthur, Ldg. Sea., H.M.S. "Tintagel."

Portland : S. R. Cook, Tel., H.M.S. "Titania."

Naval motorcyclists in exile on the China Station will be interested to learn that eight members of the Dolphinian M.C.C. are leaving for China next month on H.M. Submarines.

These members propose forming a branch and endeavouring to stage grass-track and similar events with the aid of the machines obtainable in that district. By joining this branch of the club, men will meet good friends, get the latest news of the 1930 Show, and assist the club in creating a precedent, namely, a motor-cycle club with a branch 10,000 miles away.

Inquiries should be addressed to S. McInnes, Tel., H.M.S. "Poseidon."

The Editor invites Club Secretaries to send details of their fixtures, sporting and social, for publication in these columns. These items should be sent to reach this office not later than the 16th of the month.

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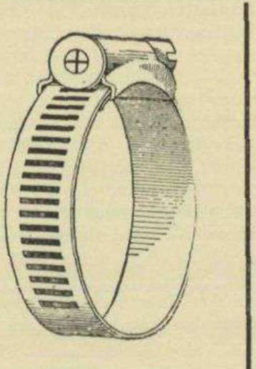

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Letters from Readers.

Wanted—A Real Racing Car.

IT has struck me that this country is wasting a lot of very good money on projects that are not worth the trouble—in particular the Land Speed Record. While agreeing that it is important for Britain to retain this record, I see no object in building two cars costing in the neighbourhood of £10,000 each to attack a record already held by a British car and driver, and when it is in no danger. Surely, instead of spending all this money on one car, it would be better to spend it on building a team of three special racing cars of about two litres capacity, to participate in the principal Continental races. Think of the propaganda for the "Buy British" campaign if a British car won the Targa Florio! Birkin showed what we could do, given the chance, in the French Grand Prix, and that in a sports car, so let us hope something will be done about it in the near future.

In conclusion, may I say that I admire MOTOR SPORT for so consistently pushing the cause of the real racing car, in the face of the chronic apathy of our manufacturers?

A. M. Williamson.

Margate.

Air v. Water-Cooling.

I read the remarks of your correspondent, "Pro-Air," with interest, but I do not agree with his views that air-cooled engines for racing cars would be an advance on the more usual type.

In pointing to the air-cooled aero engine as an example of what can be done with this method of cooling, he overlooks two vital facts. In the first place, the average aeroplane power unit turns over at a meagre 1,800 to 2,000 r.p.m. Secondly, it is treated to a constant stream of cooling air of about 80 m.p.h. velocity. It is, therefore, working under fairly favourable conditions.

The modern racing car engine, on the other hand, as we all know, is kept busy at speeds ranging from 3,000 to 6,000 r.p.m. for long periods. Would it stick it if it was cooled by air? Obviously not unless a blower were incorporated, and then there would be further complication. And what about the Schneider Trophy machines? They were *water-cooled.*

G. D.

Purley.

Tractor Screws for Outboards.

AS "W.S." remarks in last month's MOTOR SPORT, pusher type propellers are used on nearly all outboard motors. One American firm of outboard manufacturers, however, adopted the tractor screw on their racing models some time ago, and the writer has had considerable experience with these motors.

So far as speed is concerned, the use of the tractor instead of the pusher propeller makes little, if any, difference, and the fastest outboards built to-day use pusher propellers. This may be due to the fact that further experiment is necessary to find the correct design and position for the tractor propeller, but it should be borne in mind that although mounting the screw in front of the gear housing allows a clear run of water to the propeller, it causes a considerable interruption of the flow *away* from the propeller, which is an important point.

It was the writer's experience that steering with these motors was decidedly tricky. It was necessary to hold the tiller very firmly, otherwise it would jerk out of one's hand and slap hard over, with disastrous results. When steering with a wheel (which is the only satisfactory way of controlling a racing outboard), it was necessary to see that the steering cable and connections were exceptionally taut and strong, if an involuntary immersion was to be avoided.

F. H. S.

Welwyn, Herts.

Letters on any subject of interest to readers of "Motor Sport" are always welcome, but correspondents are asked to be as brief as possible. Personalities and recapitulation must be avoided, and it must be understood that the Editor is not responsible for the views expressed.

WITH A BRITISH CAR ON THE CONTINENT.

WHILE the habit of travelling far afield is increasing among British motorists, there is still an idea that conditions on the more distant continental roads are too severe for the average British car. That this idea is mistaken is proven by the record of an ambitious tour, in the course of which no fewer than twenty frontier stations were negotiated and nearly 8,000 miles traversed in eight different countries successfully performed during the past summer by two Englishmen, Mr. Tim Dexter and Mr. J. A. Orr-Ewing on a Riley 9. The tour was undertaken partly for business and partly for pleasure purposes, and began with a journey up to Glasgow with the object of making a start from that city in the Czecho-Slovakian motor rally, which finished in the High Tatras mountains at Tatranska Lominca. The British entrants were successful in gaining the highest award in the rally, in spite of the strenuous nature of their journey; the route lay south to London, thence to Dover, Calais, Paris, Nancy, Strasbourg, Freudenstadt and the Black Forest, Munich, Salzburg, Vienna, Buda-Pesth and the High Tatras. The rally concluded, Bratislava was visited, and there, faced with the necessity of travelling both north to Berlin and south again to Buda-Pesth, the travellers chose first to run up through Prague, Dresden and Leipzig to the German Capital, and then to travel back through Brunn, Vienna, Bratislava again to Buda-Pesth. Having completed their business in Hungary, an exploration of the Tyrol was made in the neighbourhood of Klagenfurt and Villach, before going on to the Italian frontier, Milan and Turin. During their stay in Italy, Messrs. Dexter and Ewing inspected the many motor factories in and around Milan, and then, crossing into Switzerland by the Great St. Bernard Pass, spent a brief holiday in Berne and among the lakes. The only trouble experienced throughout the tour was a broken petrol filter glass, caused by a stone thrown up by the wheels of the car. The British Fort Dunlop tyres behaved themselves perfectly in spite of the atrocious roads which had to be covered, off the beaten track in Hungary and Czecho-Slovakia, on the official rally route, and in no country did they find the slightest difficulty in obtaining supplies of petrol and oil of the grade used at home. One of the principal features of their observations on continental travelling—of interest to future British tourists—is, that the familiar "bar & circle" sign of the Pratts High Test pumps is everywhere to be found, although the actual fuel may be known as Lampo, Esso, or by other names in different languages. Whatever the name, however, the spirit is exactly the same as that supplied at home, and the "bar & circle" is a welcome reminder that one of the difficulties, at least, of foreign touring has been removed—the difficulty of obtaining a fuel suitable for our characteristic high speed, high efficiency British engines.

T. D.

ITEMS OF INTEREST

FROM VARIOUS SOURCES

A New Low-Priced Fuel.

"Motor Sport's" Technical Investigator writes :—

I HAVE recently had the opportunity of carrying out an extensive test of some spirit now being put on the market by Trinidad Leaseholds Ltd. This fuel, known as "Regent Super" is of particular interest as being a British Empire product, and is put on the market in a No. 1 grade, which I tested, and a commercial grade. The No. 1 costs 1s. 2½d. per gallon which is 2d. cheaper than a normal first grade spirit, which makes the results obtained unusually worthy of note.

The test was carried out on a four-cylinder engine, which owing to its sensitivity to the fuel in use, is excellently adapted for testing anti-detonating qualities, which are so important in sport engines. It is in its ability to reduce detonation that it will be chiefly attractive to readers of this journal. This quality is sometimes, however, obtained at the expense of other equally important features, and I was careful to observe its performance in the matter of starting and speed. The maximum speed was unaltered from the normal fuel, a petrol-benzol mixture. Starting from cold was excellent, and normal running conditions were reached quickly without any special warming up. At the end of the test I examined the oil in the crankcase, and could find no signs of any dilution from the heavier fractions of the fuel, showing that combustion is complete. In fact the fuel appears very suitable for all engines, especially those of slightly higher than normal compression ratio.

Trans-American Record.

IN 1915 a Stutz car driven by E. G. Baker—popularly known as "Cannon-Ball" Baker, traversed the American Continent in 11 days 7 hours and 15 minutes. This same driver, again on a Stutz has recently covered the 3,000 and 200 odd miles in the record time of 60 hours 51 minutes, thus clipping 6 hours 47 minutes off a previous record made last August.

Baker left New York at 8.30 p.m. on a Monday evening Eastern time, and arrived in Los Angeles on Thursday morning at 6.21 a.m. Pacific time, making the journey in sixteen hours less than the fastest limited trains. His route led through Wheeling, W.Va., Columbus, O., Indianapolis, Fort Dodge, Kan., Flagstaff, Ariz. and Los Innas, N.M. The exact mileage of the route is 3,018.5 miles, but detours increased this over two hundred. Starting and finishing times were checked officially by Western Union.

At each contact point where the "Cannon Ball" stopped for fuel or food, he took time to wire the Stutz works. An extraordinary feature of the run was that the engine was never stopped. There was one driver only at the wheel all the time. With the exception of replenishments of petrol and oil the car only stopped three times to extract nails from the near-side rear wheel.

Motorists who brag about their 400 miles a day will appreciate Baker's amazing feat of averaging 52.92 miles an hour for three nights and two days.

The British Double Twelve Hour Race, 1931.

IT is announced that the third British Double Twelve Hour Race will take place at Brooklands Motor Course, on Friday and Saturday, May 8th and 9th, 1931, subject to the usual approval of the track authorities.

This classic event will be the premier endurance motor race to be held in England this year, and the Junior Car Club, which body will organise the contest, is now preparing the regulations which, it is hoped, will be issued in the near future.

English as She is Wrote.

THE problems that beset almost every export manager are many and various.

For instance, this is a copy of a letter recently received by Messrs. Rootes, Ltd., from a store in Onitsha, Nigeria, in reply to a circular letter.

"DEAR SIR,

"I am sorry I am not reply to your letter but I am not in right to do. So am just to ask you about your health and presents ?

"Your last letter I received I was not at home I going to Portharcourt.

"I don't think I should have written to you again as the year is finished—Oh I am wrong to do it.

"I received all your letters don't mind I read all.

"Please salute all your firm for, me one by one.

"Keep feet old friend.

"Cheerio from your Onitsha friends.

"God bless all,

"Yours sincerely,
"Said N. Obiora."

A difficult letter to reply to intelligently !

Lagonda Lubrication.

IN a recent issue of MOTOR SPORT we stated that Lagonda Ltd. recommend both "Triple" Shell and Prices' Motorine C. de Luxe for all their models other than their supercharged 2 litre.

We are now asked to point out that in addition to these two grades, this firm also recommends Mobiloil T.T. and Wakefield's Castol XXL, both of which have proved eminently satisfactory for the lubrication of Lagonda Cars.

"All-Enclosed" Motorcycles Popular.

WHEN any new feature of design is introduced there must always be an element of doubt as to its reception by the general pubilc. In itself it may be excellent, but if it is devoid of the characteristics which appeal to the buying public, it is doomed to failure.

The all-enclosed type of motorcycle which made its appearance at the recent Olympia Show is an example of a design which might, or might not, have proved popular. The pioneers of this machine (the New Hudson Co.), however, were never in doubt as to its reception and that their confidence in it was justified is shown by the fact that orders for it to-day exceed, by five times, those for their products a year ago ! The factory, which has recently been re-organised from top to bottom, is working 'full bore' to meet the demand and already the output of machines is four times as big as it was at the same time last year.

Difficulties on By-pass Roads.

OWING to frequent complaints of delay and discomfort on certain by-pass roads, the Automobile Association recently took a census of traffic for periods of three hours in the morning and three in the evening, to ascertain definitely the extent to which motor traffic is using by-pass roads.

At the Esher fork of the Portsmouth Road, and the Kingston By-pass—the latter being obstructed considerably by reconstruction work—it was found that over 57% of the motor-cars, lorries, 'buses, and motor coaches, are using the old road. Between 8 and 9 a.m. 72% of the private cars avoided the by-pass.

Owing to its 'disturbing' surface, another by-pass is being shunned by a large number of motorists, with a consequent increase of traffic through the town it was intended to relieve.

An Efficiency-Tuning Booklet.

AS specialists in high-efficiency tuning and manufacturers of high-class "internals" for engines, the Laystall Motor Engineering Works, Ltd., need no introduction to motor sportsmen. This concern has recently issued a new booklet dealing with their establishment at Southwark, their various processes, and products. Produced primarily, of course, as advertising matter this little publication is, nevertheless something more than a mere catalogue ; it goes into the matter of hotting-up, repairs and overhauls in a really readable and enlightening manner, while it is also copiously illustrated.

These interested may obtain a copy by writing to the firm's headquarters at Ewer Street, Southwark, London, S.E.1.

THE MOTOR SPORTSMAN'S DIARY

1931

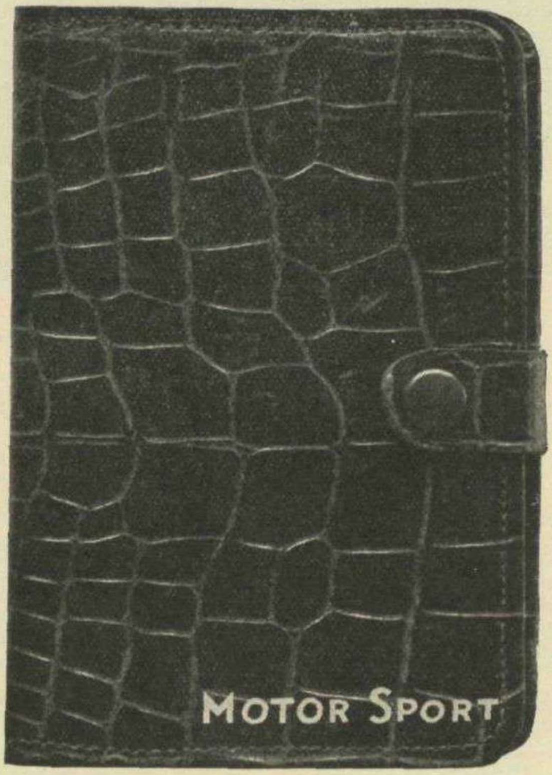
AS ILLUSTRATED

3/6

AS ILLUSTRATED

But without Pockets, Pencil and Button Fastener

2/6



ACTUAL SIZE

Bound in polished Crocodile Leather, with pocket and pencil inside, many pages of Sportsman's matter, including Summary of Road Traffic Act 1930, Land, Water and Air records, and all other information useful to the Sporting Motorist.

ALSO

THE MOTOR SPORTSMAN'S NOTEBOOK

Containing all the information as above, bound in Polished Crocodile Leather.

With Pocket and Pencil inside **3/6**

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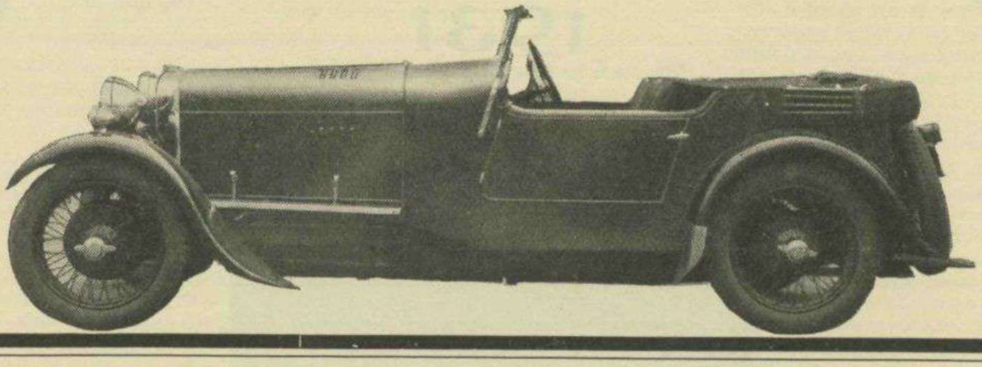
MOTOR SPORT (1929) LTD., 34, DUKE STREET, ST. JAMES'S, S.W.1.

FRAZER NASH



Brilliantly Successful In 1930!

A general-purpose Car built for the enthusiast, who, though primarily requiring a Car for business and *really* fast averages, wishes to compete in Speed Events, Reliability Trials, and Hill Climbs. May we demonstrate the FRAZER NASH to you? You will enjoy it and we should appreciate the opportunity of getting the Car more widely known. Prices from *£325* ("Interceptor" two-seater model).

SPEED

1st. Ladies' Race, Brooklands, March 22nd. Average speed 90.02 m.p.h. Flying lap 95.05 m.p.h. (Driver, Mrs. T. H. Wisdom.)
1st. Brooklands Mountain Handicap Race. Easter Monday.
3rd. from scratch same event and fastest lap.
1st. Sports Short Handicap B.A.R.C. Meeting. Average speed 91.44 m.p.h.
2nd from scratch. Brooklands Mountain Handicap Race and fastest lap. Whit Monday.
Light Car Grand Prix, Brooklands, 26th July. 3rd from scratch. Handicap Event.
Lewes Speed Trials. 1st, 2nd and 3rd (unlimited). 1st, 2nd and 3rd (sports).
J.C.C. Meeting, Brooklands, Brake and Acceleration Test. Fastest time (unlimited)

RELIABILITY

Gold Medal London/Exeter, 1929. (Same car 1st Ladies' Race, Brooklands)
London Land's End Trial, 1930. 8 Gold Medals.
Inter-Varsity Trial (won by Cambridge). No marks lost E. W. BASS (Frazer Nash).
Double Twelve, Brooklands, 2 cars entered, 2 finished (100% Success).
M.C.C. One-day Sporting Trial—Only Premier Award.

HILL CLIMBING

Brighton Hill Climb. 1st, 2nd and 3rd. Racing.
Shelsley Walsh (Open). 1st, 1,500 c.c. (racing). Ladies' Cup (fastest time), 1st.
Shelsley Walsh (Amateur)—
    1,500 c.c., 1st, 2nd (sports).
    1,500 c.c. (racing), 1st, 2nd and 3rd.
    Ladies' Cup (fastest time), 1st.

Holders of the following Records

Brooklands Test Hill (Unlimited).
Shelsley Walsh 1,500 c.c. (Racing).
,, ,, 1,500 c.c. (Sports).
Madresfield Park (Unlimited).
Brighton Hill Climb (Unlimited).
Lewes Speed Trials (Unlimited).
Post Hill Climb (Unlimited).
Hepolite Scar Hill Climb (Unlimited).

Frazer-Nash Cars

(A.F.N., Ltd.)
Falcon Works, London Road, Isleworth, Middlesex
Telephone: HOUNSLOW 3171-2.

ABOUT—

THE 1½-LITRE FRAZER-NASH

A SPORTS CAR POSSESSING IMPRESSIVE CHARACTERISTICS.

[Motor Sport Photo.

The "Interceptor" on Alms Hill.

NEVER, since the first Frazer-Nash car was produced, has the firm made anything but sports cars, and some special racing machines. Such a policy is bound to produce a vehicle of remarkable performance, and the competition successes of this marque have shown how well its makers understand the requirements of the really hard driver.

Among the first appearances of the Frazer-Nash in important competitions was the Boulogne meeting of 1923, when the maker's team won the Pickett Cup in the Boulogne Grand Prix, and was the only team to finish intact. Having shown the efficiency of this type of chain driven chassis, the seasons following were occupied in experimenting to find the most suitable engine for use in their production cars. This resulted in the adoption of the 1½-litre four-cylinder side valve engine, the latest edition of which is now available in all models, alternatively with the o.h.v. engine which has now been fitted for the last two seasons.

During this period, and for some time afterwards, the production was small; but in spite of this they were becoming known for their acceleration and handiness, proof of which was given by Clive Gallop in 1925, when he won the Light Car Grand Prix at Boulogne and set up a new lap record for the course. Development was thence purely a matter of detail refinements, and the elimination of any wear or weakness which the violent treatment of hard-hearted testers could bring to light.

The firm passed through various phases of management, but the guiding principle of the car remained, that is a high power-weight ratio, perfection of handling, and excessive strength of every essential part. This means that many parts, which on a touring car could be made of normal material, must on this chassis be made of very special metals. This naturally increases the cost, but at the same time increases the life and reliability under arduous conditions, out of all proportion to the extra price.

In the older models, in spite of their delightful qualities as a sporting vehicle, there was a certain lack of the refinements and comfort which the pampered motorist of to-day is always demanding, and it is in this that the latest Frazer-Nash models stand out as different to their more spartan prototypes.

Last year, after a complete reorganisation of the firm on more efficient lines, a new works was built, the lessons of past years consolidated, and the car laid out for production by modern methods. The demand of owners for detail improvements, previously set aside as of minor importance to the ideal of performance with reliability, was given full attention, and the result is a very remarkable vehicle. All the old qualities of "pep" and roadworthiness are there, and with them a sweetness of performance, thoroughness of equipment, and smartness of appearance, which would make an owner proud of the car in any company.

The model selected for test by MOTOR SPORT was the latest o.h.v. "Interceptor," as being the lowest priced model of the range, introduced for this year in answer to the demand for a complete Frazer-Nash, though

A New Tyre...

PIRELLI BLUE RIBAND SUPERFLEX
MADE IN ENGLAND

. . . that supersedes all existing standards of performance

THE Blue Riband is the finest tyre ever offered to motorists. It is the outcome of thirty years' experience in tyre manufacture . . . the triumph of the Pirelli "New Technique." Its massive, deep-cut tread means more miles and greater safety . . . its utterly dependable, resilient carcase mean longer service. The Blue Riband is built to a superlative standard.

Get "Blue Riband" fitted to your car.

FITTED STANDARD TO FRAZER NASH CARS

PIRELLI
BLUE RIBAND

Pirelli Limited, Pirelli House, 144 Queen Victoria St., E.C.4

THE 1½ LITRE FRAZER-NASH—continued.

shorn of some of the unnecessary frills and extras available to the man to whom price is of less importance, and who can obtain from this firm practically any specification or performance he requires.

The actual car we tried was a standard "Interceptor," in engine and other essentials, but whose longer chassis and heavier 3-seater body were those of a demonstration car, with 26,000 miles to its credit. Therefore, when considering the performance figures of this car, it must be remembered that the standard model, which is a 2-seater, weighs 3 cwt less, and will thus have an even better performance than the car we tried.

As soon as the car is taken on the road one realises that the acceleration is definitely unusual, and this is very useful under modern traffic conditions, and also in putting firmly in his place any lad in a sporting-*looking* vehicle who thinks he will show off. It may sound rather "young" to indulge in this form of scrapping, but it is much safer than when two cars of similar speed attempt to "show each other how" on a not-too-safe road, and the delight of getting away from everything with a big margin gives a feeling of satisfaction which makes the most staid of us become quite cheerful again.

After successful acceleration tests against some other cars, we tried some against the watch, and the readings were so unusual that we tried many times to make sure they were accurate.

It might be as well here to mention that this vehicle has 3 speeds, though a 4-speed gear can be fitted as an extra. Those readers not used to a Nash may wonder at a sports car with only 3 speeds. Such as were brought up on fast motorcycles should think of the 3-speed close-ratio boxes they used and the performance they got, and they will realise what is meant by a Frazer-Nash not requiring more than 3 speeds for ordinary use.

The standard low gear is 11.6 to 1, though on our particular car it was 11 to 1. One of the beauties of the Frazer-Nash transmission, incidentally, is the way in which any of the gear ratios can be independently altered to suit any conditions. The normal ratios are 6.5 and 4 to 1 for second and top respectively. Bottom gear sounds high, but we were later to prove that it is quite low enough, while it gives an acceleration figure of 3 2/5 secs. from 10 to 30 m.p.h. This means that over this part of the speed range one has the whip hand over practically anything on wheels, while the fact that on second gear it requires but 5 1/5 seconds from 30 to 50 m.p.h. shows that performance is maintained up the scale. These times were taken with two up and a considerable quantity of equipment, so the acceleration of the standard "Interceptor," with its 11.6 ratio and lighter weight should come below 3 seconds for 10 to 30 m.p.h. Time your own car accurately on the level over this range and you see what happens!

The maximum speed of the car was just over 70 m.p.h. at which speed the engine was running sweetly, and gave the impression that this speed could be held indefinitely. A higher maximum would be obtainable on a somewhat lower gear, but the car is purposely geared high to give a high cruising speed with the minimum of wear and tear. The gear change, owing to the dog clutch system used, is absolutely foolproof, and when one refers to an ordin-

[*Continued on page 138*

SMITH'S

SPEEDOMETERS
CLOCKS
REVOLUTION INDICATORS
AND
OIL GAUGES
are standard equipment
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FRAZER-NASH CARS

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ACETEX

THE 100%
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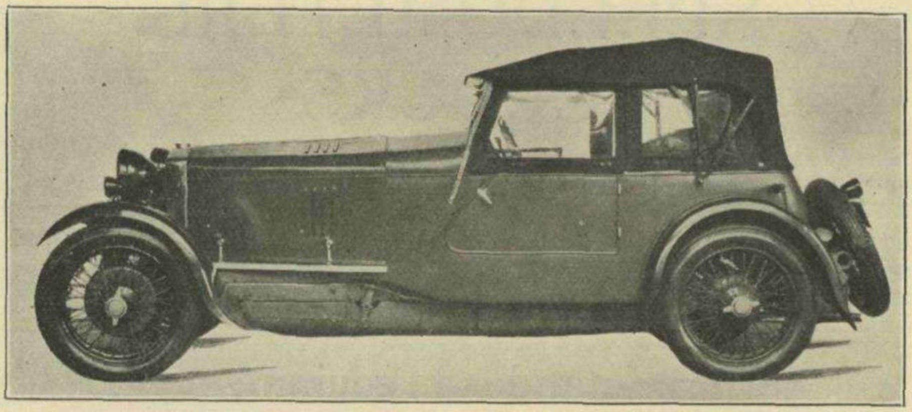
THE 1½ LITRE FRAZER-NASH—continued.

ary gear box as having an easy change, it is difficult in comparison with a Nash. The lever can be pulled straight through from gear to gear at any speed without jar or damage, and this gives a tremendous advantage when getting off the mark and running up to full speed.

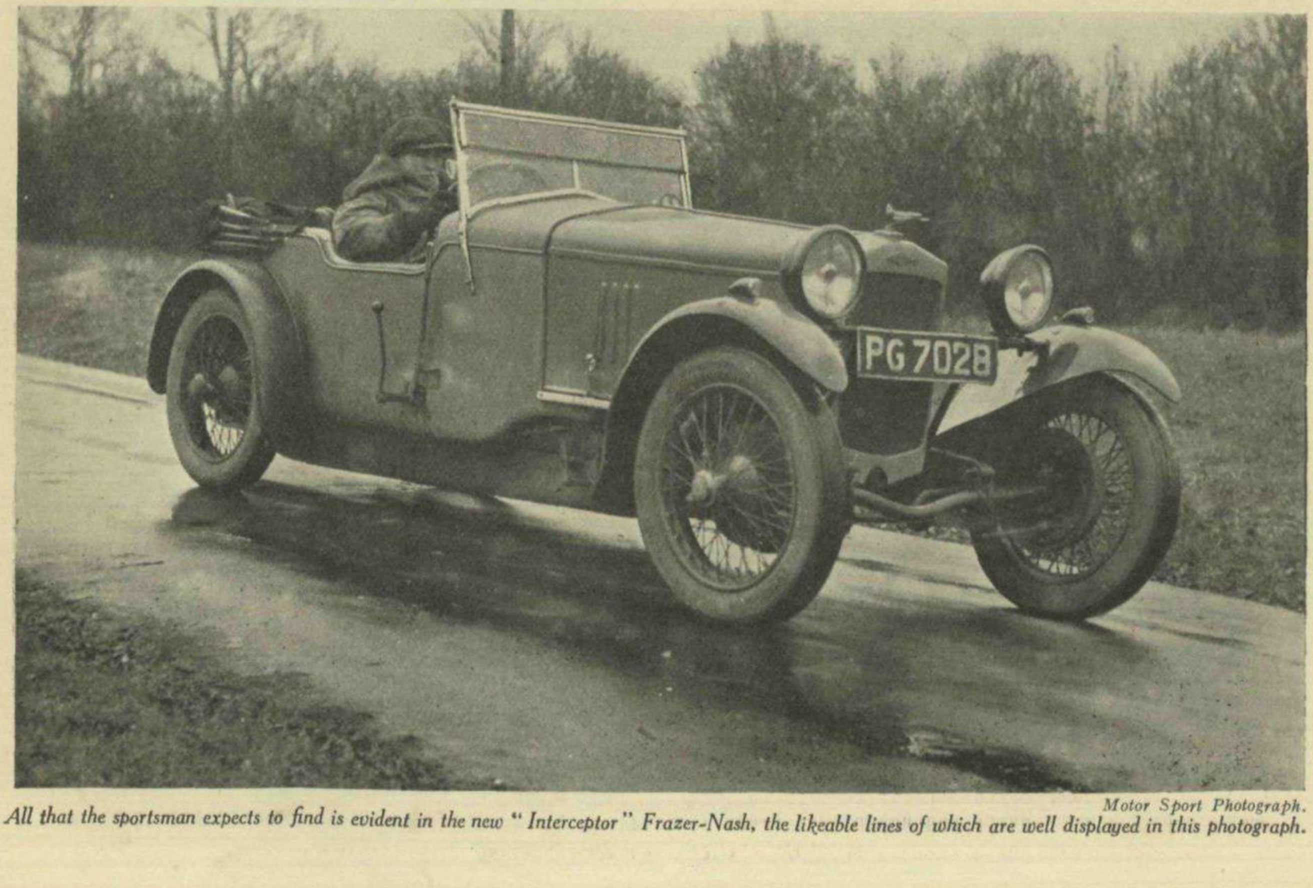
The steering is exceptional in its accuracy and ease of control, and combined with the car's almost uncanny steadiness on any surface wet or dry, makes the car a delight on a twisting road, and makes the driver feel a part of the machine in a way unsurpassed by anything we have driven. It is high geared, and the fact that only a small movement of the hand is required, however violently one is chucking the car about, coupled with perfect self centering, makes the longest drive easy.

In addition to high-speed work on main roads we took the car over some of the worst tracks in the Chilterns, and in spite of charging over appalling surfaces we failed to produce any rattles or loosen a single nut. The solid axle, plus the Pirelli tyres, reduced wheelspin to a minimum, and the accuracy with which the car could be directed on any surface showed what a suitable vehicle it is for a stiff trial.

Deciding to test it as drastically as possible we proceeded to the famous Alms Hill near Henley, at present absolutely in the worst possible condition. In addition to its sodden shiny surface, and 1 in 2½ gradient at the "cannons," there was a carpet of wet leaves to catch the rash climber who gets near the summit. The first attempt without any preparation in the way of tyre-pressures, etc., and without a passenger failed. The tyres were let down a few pounds, the passenger shipped once more, then all out from the start. Taking the bit between its teeth, the Nash tore up the lower slopes, breasted the "cannons" at a good 30 m.p.h., shot over the next leaf-strewn stretch on sheer impetus and purred steadily to the top. Maidens Grove and Lewknor seemed absurdly easy after this, the latter being climbed in second gear. Altogether a remarkable sports car for £350, especially when one considers the excellent equipment, which includes Acetex glass and the best that Messrs. Lucas and Smith can supply.



The 3-4 seater Frazer-Nash with all-weather equipment.



Motor Sport Photograph.

All that the sportsman expects to find is evident in the new "Interceptor" Frazer-Nash, the likeable lines of which are well displayed in this photograph.

LUCAS

"KING OF THE ROAD"

LAMPS, MAGNETOS, BATTERIES & ACCESSORIES

are fitted on

FRAZER NASH CARS

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Behind Lucas Products there is a large and ever-growing world-wide Service Organization which gives specialized service on every unit of the equipment.

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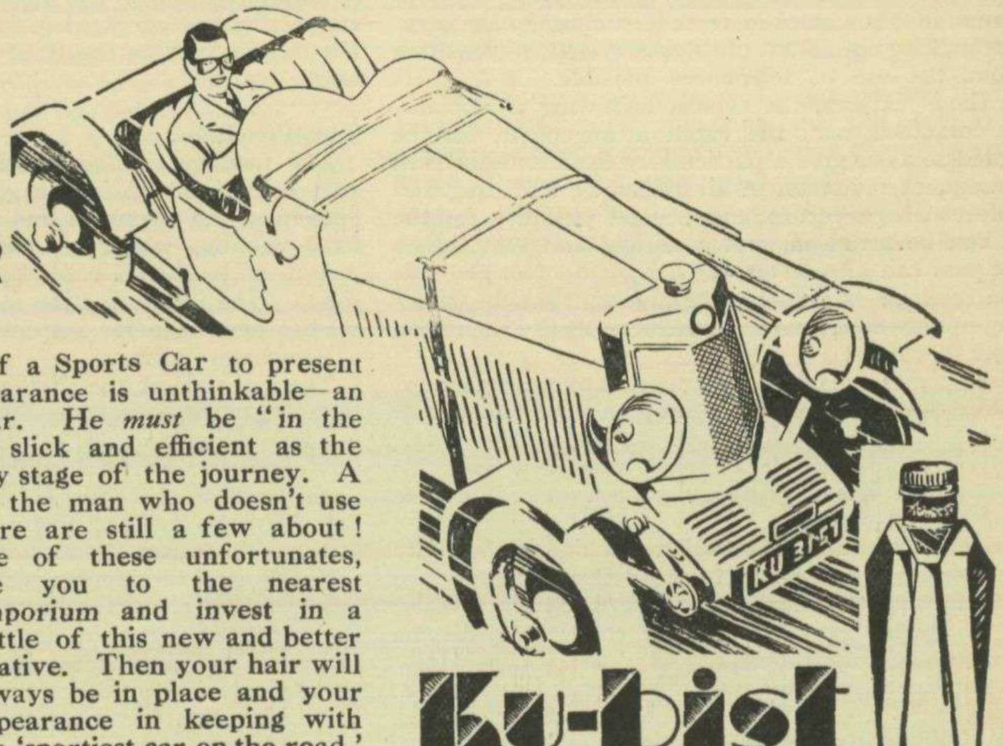
SMART CAR— SMART DRIVER



For the driver of a Sports Car to present a draggled appearance is unthinkable—an insult to the car. He *must* be "in the picture"—smart, slick and efficient as the car itself at every stage of the journey. A problem, this, to the man who doesn't use Ku-bist—and there are still a few about! If you are one of these unfortunates, hie you to the nearest emporium and invest in a bottle of this new and better fixative. Then your hair will always be in place and your appearance in keeping with the 'sportiest car on the road.'

KU-BIST FIXATIVE, price 1/-, 1/9 and 2/9 per bottle, Plain or Rosola (for dry scalps). KU-BIST SHAMPOOS, 1/3, 2/3 and 3/3 per bottle. KU-BIST SOLID BRILLIANTINE 1/3 per tin.

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HAIR FIXATIVE

From leading Stores, Chemists and Hairdressers, Boots', Taylor's, Parkes', Needham's, etc., or post free from KU-BIST SALES, LEEDS.

AIR

LIGHT 'PLANE TYPES

A LIGHT CABIN MONOPLANE

The " Hornet-" engined Civilian Coupé.

WHEN its development elsewhere is considered, the enclosed small aeroplane has been rather slow in materialising in this country, but now that it has been taken up seriously by our leading manufacturers it is safe to foretell that within the next few years it will be the predominant type.

The most obvious advantage of the cabin machine is that it affords a great increase in comfort to the occupants, making special kit unnecessary, and conversation without the use of telephones possible. But apart from these features, the typical high-wing monoplane, when combined with the cabin arrangement, can be designed so as to give a particularly clean exterior with a consequent reduction in air resistance and drag and therefore a high performance ; good visibility for the pilot can be arranged, and a normal and easy access and egress can also be provided by a door at the side of the fuselage—a palpable improvement on the clambering-up-and-squeezing-in business necessary with open cockpit machines.

These points, are of course, apparent to everyone now, but credit is due to Mr. H. Boultbee, the designer of the Civilian Coupé machine here described, for realising them as long ago, as 1926, for it was then that this 'plane, which has only recently been placed on the market, was first evolved.

Incidentally, while the Civilian machine is a definite newcomer, it is interesting to recall that Mr. Boultbee has been associated with aviation for over twenty years, and was for a considerable period connected with the Handley-Page concern.

As can be seen from the accompanying illustrations, the Civilian is a monoplane with the mainplane braced by " V " lift struts. In construction it follows orthodox practice, incorporating spruce box spars and three-ply and spruce ribs. The wing section adopted is said to have a very high stalling angle, and the wing tips are tapered with the object of giving a large degree of lateral control. The covering is of three-ply, reinforced at the leading edge to prevent any deformation. The wings are made to fold, and are attached at their roots to the fuselage by simple but robust fittings ; they are anchored to a steel tube structure which forms the top half of the cabin framework.

The folding procedure is particularly easy, and can be done single-handed without disturbing the lift struts or aileron controls. No jury struts are necessary for supporting the wings when in the folded position, and the locking-pins on the front spar fittings have double safety catches.

The Fuselage.

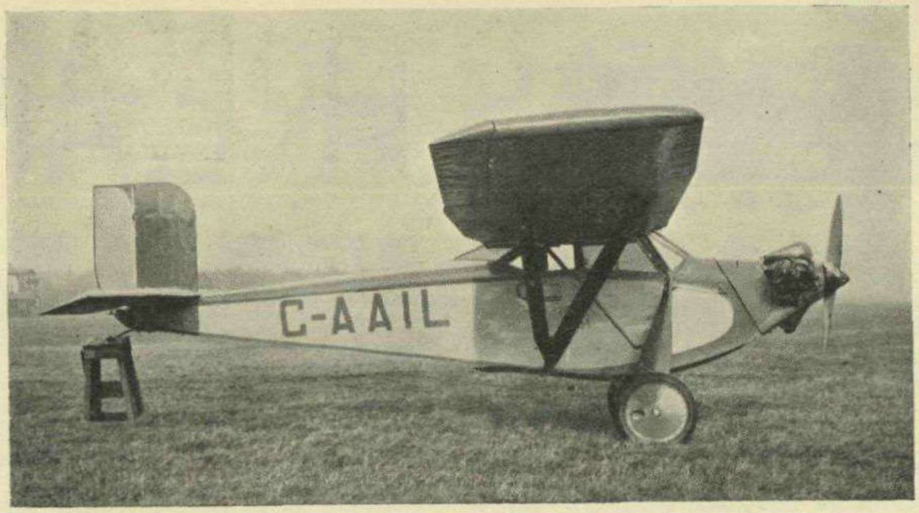
The fuselage is of composite construction, the rear part being built up in box girder fashion, with spruce longerons and members and three-ply covering. The front section, which includes the cabin and engine mounting, is of steel tubes bolted together with simple joints. The interior of the rear end of the structure is readily accessible for inspection or attention through a detachable fairing.

The tail unit of the Civilian is very neat and clean in appearance, being devoid of all exterior bracing, cranks or king posts. Both the elevator and fin are of full cantilever construction and the complete empennage, comprising rudder, fin, tail plane and elevator are secured to the fuselage by four bolts. As in the case of the main planes, the covering is of plywood.

The control mechanism is rather unusual ; no cables are used, the connection between the stick and rudder bar to the various controlling surfaces being by pull-and-push rods. Ball-bearings and oil-less bushes are used throughout, and by cutting fulcrums and cranks down to a minimum, waste action is obviated. All control levers are concealed, giving unbroken surfaces to the tail and ailerons.

The undercarriage, in keeping with modern ideas, is of the axle-less type, with a wide track (6 feet 6 inches) Landing shocks are taken by rubber absorbers, in compression, and the whole arrangement of the components

A LIGHT CABIN MONOPLANE—continued.



In flying position. The Civilian Coupe monoplane. The production machines will differ in certain details from the one shown here; the tail skid, for example, will be replaced be a small wheel, and the latest type Dunlop-cum-Bendix wheels will be incorporated.

is covered by neat streamline fairing pieces. The top ends of the legs are attached to the top longeron and the "V" radius rods pivot on ball joints, which are enclosed in grease covers, on the bottom members. The under-carriage is equipped as standard with Dunlop wheels, fitted with Bendix brakes. These are operated independently for taxying, by the rudder bar, or together by a convenient hand-lever. On the production models of the Civilian, a small wheel replaces the tail skid; this renders a trolley unnecessary when the machine is being moved about in the hangar, and at the same time, lessens the strains imposed on the fuselage in landings.

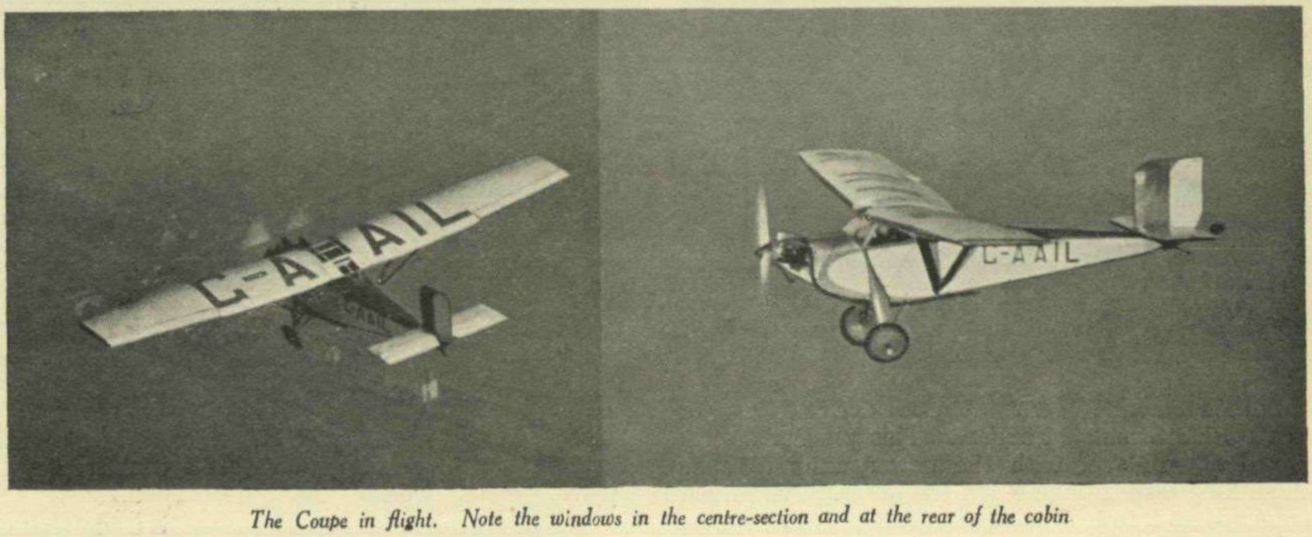
The cabin accommodates two people, the pilot's seat being on the port side. They are carefully designed to give a really restful position, and are fitted with air cushions. Removal of the passenger's seat leaves a space of 10 cubic feet, and quite large and bulky goods can be easily loaded through the wide side doors. The furnishing of the cabin interior is well carried out, the walls being covered with either hide or cloth. Hand-rails and a foot rest for the passenger are fitted as standard. The instruments are neatly arranged on a facia board, and a locker is provided for maps. Besides the extra space made possible by removing the passenger seat, ample room is also available within the cabin to the rear of the pilot. Golf clubs, fishing tackle and the like can be housed in a locker beneath the fairing to the rear of the cockpit. Naturally, all windows have safety glass, and one of the outstanding features of the machine is the exceptionally good view above, in front at the sides and behind.

The Engine.

The standard power unit installed in the Civilian is the well-known A. B. C. 75 h.p. "Hornet" flat four. It is supported on a steel tubular mounting, so arranged as to minimise any vibration being transmitted to the rest of the machine. The throttle and ignition controls oil gauge, and revolution indicator are all conveniently grouped so as to simplify matters when the unit is taken out for overhaul, and the engine itself is secured by four conveniently-situated bolts. A fireproof bulkhead is built into the nose, at the rear of the engine, and behind this is the oil tank.

Feed to the carburetter is by gravity, the fuel tank being situated in the port wing, near the root; it has a capacity of twenty gallons. This gives a range at cruising speed of about 360 miles (4½ hours).

Under test the experimental machine, which was first built in 1929, shows good all round qualities with a top speed of 102 m.p.h., a cruising speed of 85 m.p.h. and landing speed of 36 m.p.h. The rate of climb is 550 feet per minute, and its ceiling is about 16,000 feet.



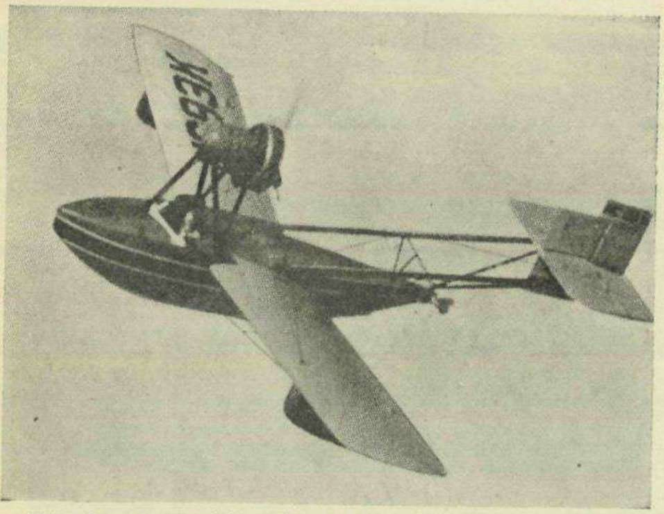
The Coupe in flight. Note the windows in the centre-section and at the rear of the cabin

SLIPSTREAMS

"Airplanes."

THE sameness in layout, appearance and performance which has become characteristic of the American motor car, so that only by close scrutiny of the radiator badge or hub cap can one now ascertain the make, is not met with in aircraft of the U.S.A. On the contrary, designs are extremely varied, and often original, which is scarcely what one might expect from a country where rigid standardization in production has for long been regarded with so much importance.

Over here, many erroneous ideas are prevalent concerning " airplanes." One is that every U.S. ' plane is a cabin monoplane. In point of fact there are about as many biplane types as monoplanes in use, while departures from recognised practice and principles are quite common. In the flying boat and amphibian class the Americans display considerable originality, and a typical example is found in a small two-seater machine of the latter type, known as the " Privateer." The hull is built up as a separate unit entirely. The monoplane wings are attached to the upper structure, and braced above and below by streamline wires. The tail unit (as in the Sikorsky) is mounted on steel tail booms, and the engine, with pusher air screw, is perched on struts above the cockpit. The motor is a " Scarab " radial of 110 h.p., and 95 m.p.h. all out, and a landing speed of 41 m.p.h. are claimed. The pilot and passenger seats are arranged side-by-side. It costs about £1,000.



The American amphibian, the " Privateer," with 110 h.p. Scarab.

Another machine of very unusual design is the Bellanca " Blue Streak " Tandem. This plane is a twin-engined sesquiplane, with the power units (650 h.p. Conquerors) placed one behind the other. The forward engine, geared 2 to 1, drives a tractor screw, and the rear one, geared 7 to 5, and connected by a short shaft which passes through the fuselage, drives a pusher propeller. The tail is attached to four large diameter tubular outriggers ; a large fin and rudder are fixed in the centre of the tailplane, and there are two additional fins near the tips. The " Blue Streak " has been designed for long distance flights and carries something like 2,200 gallons of fuel. The wing span is 83 feet, and the machine empty weights 8,000 lbs. A feature is that both engines are accessible in flight.

A Motor-Glider.

Going to the other end of the scale, one finds an extraordinary little craft—an amphibian glider. This machine is 36 feet-span monoplane, made by a firm in New York. And you can buy it with or without an engine. The latter is a 25 h.p. " Jacobs " flat-twin, and the buyer can, if he wishes, take delivery of his machine in pieces, and erect it himself. Little structional alteration is apparently necessary to convert the machine from a sailplane to a power-glider, the engine being mounted on the centre section, on a tubular strut arrangement.

Amateur construction of planes is far more common in the States than over here and, apparently, the supply of designs, materials and parts to private builders is a growing branch of the industry.

At the recent National Air Races, a notable performance was put up by a " home-made " machine—a monoplane constructed by Mr. Ben. O. Howard. Built solely as a racer this little craft has a span of 20 feet and weighs (empty) 635 lbs. It is credited with a maximum speed of 194 m.p.h. So Mr. Howard obviously knows what he is about.

The Schneider Settled.

The conference held in Paris by the Federation Aeronautique Internationale (F.A.I.) terminated last month with satisfactory decisions connected with the Schneider Trophy Contest, arrived at on the numerous points which have been under discussion for some time. Of major importance, of course, was the matter of entrants' deposits for this year's event, and it has now been agreed that each entry must be accompanied by a deposit of 200,000 francs per machine. Thus, the contention of the Royal Aero Club on this matter, previously disputed by both Italy and France, has been finally upheld. The closing date was Tuesday, 30th of last month, but the list of competing machines has not yet been issued. The date of the race is to be fixed for a day between 31st August and 19th September, and the course will be 50 kilometres. According to reports, the circuit will be the one chosen in 1929 in the Solent, while it is also stated that the British entry will comprise the same machines as those used in the last contest, flown by R.A.F. pilots " loaned " for the occasion.

" RUDDERBAR.'

Gliding Gossip and News

THE London Gliding Club announces that arrangements have now been made to ensure that gliding instruction will be available to members every Sunday from 11 a.m. till dusk, until further notice.

In view of the large number of members who now hold Royal Aero Club glider pilot's certificates, an effort is to be made to form a special advanced group, which will be able to operate without the inevitable restriction and delay caused by instructional flying. An announcement regarding the scheme will be made in due course.

The L.G.C. continues to be one of the foremost clubs as regards certified pilots, and their list is growing. Mr. Douglas Culver, who is a founder member, and one of the people responsible for the Club being formed, is one of the latest to take his "A." Culver is an old R.F.C. "Camel" pilot. He is minus his left arm as a result of a spot of unpleasantness with a Fokker D VII. in 1918, but this apparently in no way affects his capabilities as a pilot or his enthusiasm for active gliding.

A NOVELTY has been introduced by the London Club in the issuing of log books to members. These are obtainable at 6d. each. A club badge is also available—price 2s. 3d.

A TALK on sailplanes and gliding was given recently by Col. the Master of Sempill before the Manchester branch of the Royal Aeronautical Society. The gliding section of the branch has now completed the construction of a primary type machine, and this has been used at Farcoombes Farm, near Mottram, where suitable ground has been found.

THE Oxford and County Gliding Club, whose members are nothing if not enterprising, are busy with the manufacture of a glider of their own design. A feature of the new machine is the tubular welded steel fuselage.

SOME weeks ago, the Falkirk and District Aviation Club, one of the latest clubs to be formed, took delivery of a B.A.C. 2., machine. The craft was demonstrated to members by Mr. C. H. Lowe-Wylde, the designer, and afterwards Mr. J. W. Shaw, chief instructor of the club, made a successful flight. Later Mr. Lowe-Wylde gave a lecture to the club on gliding, at the Falkirk Iron Works. The committee have made arrangements for the formation of a constructional class, and it is hoped that this scheme will be got under way before very long.

IN common with most clubs, the Sailplane Club has had its operations seriously interfered with by the atrocious weather conditions which have prevailed lately. Nevertheless, members have been turning up regularly at their "drome" at Smalldole at weekends, with the hope that they might get in some gliding.

Members have recently completed the construction of a pivot device, on which can be mounted a glider so that novices can gain some idea of the working and efficiency of the controls. The apparatus appears to work well.

MEMBERS of the Harrogate Aircraft Club are now flying a machine which they have constructed themselves. It is a Dickson "Zogling" type, modified in certain details. Would-be constructors will be interested to learn that the cost works out at £20—a very reasonable figure. The machine behaves well, and already a great deal of flying has been done with it, without mishap or incident.

The Club announces that their annual general meeting will be held on 16th of this month, and that proposers and seconders of new members for the committee, or for any office in the Club should give notice in writing during the present week. It is also announced that a lecture on "Model Aeroplanes—their Construction and Flying" will be delivered before members on Friday, 30th January, by Mr. R. Gosling. Another lecture will be given next month by Major King on "Instruction in Flying Aeroplanes."

LEEDS Gliding Club, which now has quite an imposing membership, has still room for further members. Those interested should write for particulars to the Club's hon. secretary whose address is :—32, Fearnville Grove, Roundhay, Leeds.

NEWS from America indicates that gliding enthusiasts in that country are developing an establishment which is fast becoming a second Wasserkuppe.

The spot selected is known as Elmira, and is some 200 miles from New York. A preliminary survey of the site was made from a powered 'plane, and after it had been tried out with both soaring machines and gliders proper by leading exponents, it was agreed that it was ideal. A most successful gliding and soaring contest was held at Elmira some time ago, when flights of long duration were carried out by Herr Hirth, Captain Hawks (of towed-flight fame) and Jack O'Meara. The former, taking off at dusk made a night flight lasting about an hour, finally landing with the aid of flares. Later Hirth made another notable flight with a duration of seven hours, seven minutes and two seconds, with a landing back at his starting point. Captain Hawks also carried out a towed flight in his "Eaglet."

In all, some twenty-four pilots took part in the contest and there were fourteen machines of various types.

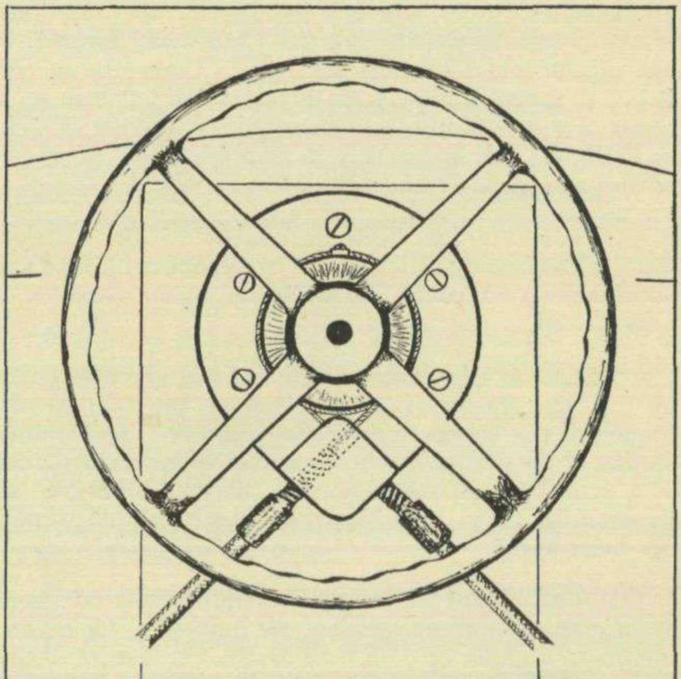
THE SPORT AFLOAT

OUTBOARD motor boats are entirely different from other racing outfits like cars or motor cycles, because they have to be more or less bought in parts, much fitting and assembling having to be done by the owner. It is essential that the fittings be just right, and of practical value if one is to stand a chance in competitive racing. The following notes here and in later issues have been gathered with the idea of giving a few pointers to prospective outboardists on what has to be done after having purchased hull and engine. I may say that all are well tried ideas and may be incorporated with safety.

Steering Systems.

There are but two steering systems that concern the racing pilot, for I think, except in emergencies, tiller steering may be disregarded. By far the most common is the ordinary cable and pulley arrangement which has the merit of being inexpensive. If this is chosen none but gun metal pulleys should be selected while an expert should be consulted as to the correct weaving for the wire. The pulley blocks should be bolted to the hull with long brass bolts, and so placed to avoid any sharp angles in the wire. If a wire-tensioner is fitted, a practice which is not recommended, it must have adequate means of being locked, for all sorts of unpleasant things have happened to boats when tensioners happened to loosen off in the middle of a race. Well worth the extra expense is the fitting of a steering system produced by W. D. Fair & Co., Ltd. Originally it was intended solely for use with the Watermota, but it has now been adapted for use with all makes of outboard engine. The principle is a modified form of the Bowden cable system.

The cable is wound round the drum on the wheel and is led through two outer-casings each fitted with a tensioner to the rear of the boat. "Stops" cast in aluminium hold the end of the outer-casing at the transom; these stops are a push fit over steel "stop-bars" which are screwed on in place of the nuts at each side of the clamp bracket. The cable end emerging from the "stops" at each side are attached under, and at the back of the motor in the usual fashion. It is obvious that very little fitting is required, while there are no strained steering wires stretching to the engine, which make a comfortable posture difficult. The most important advantage is, however, a mechanical one; with a whippy transom, the steering is badly upset when a pull is put on only one side, as in the case with the pulley-block arrangement, often resulting in a bad steering wobble, and a swim, especially with boats that do much more than 40 m.p.h.; with a Watermota steering an automatic reaction occurs at the opposite "stop" to the one through which the wire is pulled in the operation of steering, and thus any tendency to whip is counteracted.



A sketch showing the Fair steering arrangement.

1931 Models ?

Usually manufacturers and agents manage pretty successfully to hide their next season's models until the new year has actually commenced. The Elto entered by Mr. J. H. Shillan and with which Mr. Harrison was able to break the world's record at 52 m.p.h. (subject to official confirmation) was undoubtably one

THE SPORT AFLOAT—continued.

of the new 1931 Eltos, for although closely guarded, a stolen glance under its cover revealed something very un-Elto-ish in even outward appearance.

In place of the Tillitson carburettor was a huge Schebler fed by twin petrol-pipes, one from each side of the tank: a much smaller and consequently lighter flywheel was also conspicuous, and it would be interesting to know what other changes have occurred internally, as I understand the experiments of Ray Pregenzer are responsible for the changes that have been incorporated. Probably something has been done to the rotary-valve.

Perhaps, the governing body can be prevailed upon to publish, as soon as possible, the specification filed by Mr. Shillan so that other prospective record-breakers may make the same changes in their motors and then bring them on a level footing with agents who have "inside" knowledge.

It was a cry in the past that manufacturers produced new models so often that few could afford to be up to date. 1930 Elto owners will be pleased to know that another make of carburettor in place of the Tillitson which was in my experience rather too small, is presumably now permissible. I say presumably, because it is not officially confirmed. But surely Mr. Shillan in his position as agent and official of the M.M.A. would not attack a record with an engine which was not standard and thus contrary to the rules which he himself helped to formulate?

Self-Government.

I am sorry to write of any dissension at Christmas time but from the way the wind is blowing at present it would appear that the outboard section of the B.M.B.C. will soon be quite divorced from the parent body. The B.O.R.C. has shown itself dissatisfied with the administration of the parent body on more than one occasion during the year but things have now risen to a head over a financial matter. The B.M.B.C. balance sheet shows a deficiency of some two hundred pounds, no great sum for the size of the organisation, but the outboard section have disclaimed any responsibility, and what is more, have written a letter to that effect to the B.M.B.C., the long list of signatories being headed by Viscount Kingsborough, a man who has the sport really at heart. I believe the reply sent, somewhat lacked the serious note, but eventually a meeting was fixed, the deliberations of which had not at the time of going to press been published.

Personally, I would welcome an entirely independent self-governing outboard racing club instead of one in which manufacturers, agents and yachtsmen constitute the majority of the administration. On more than one occasion last year competitors hit a submerged fence at the Harp, because it had been no one's responsibility to see that the buoys were moved, the level of the water having dropped between one meeting and the next. I feel sure that the only satisfactory method of overcoming difficulties of this sort is to have one or two paid officials whose sole job it is to see that things are right for all the competitors. However, the B.O.R.C. will be taking a right step if they arrange for their meetings to be run by outboardists themselves, who realise the difficulties with which the competitor has to contend.

F. M.

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HERE and THERE

By "Camshaft"

That Radiator Strip.

THE popular fashion for a chromium plated strip running down the centre of the radiator has met with criticism in certain quarters. It has often been said that use is ornament, and that ornament without use is unwarranted artistically.

On most cars where this radiator strip is fitted it serves no purpose whatever and artistic critics are doubtless right in condemning it. But on one of the first cars to employ it of recent days, the Rover, it has a definite use, for it forms the central support of the " V " shaped radiator stoneguard. This make, at any rate, must therefore be exempt from criticism.

British Policy v. American.

An interesting side-light on mass production methods was revealed in Coventry recently by Mr. T. G. John, Managing Director of the Alvis Company.

Mr. John explained that the cost of labour to a car manufacturer, in respect of work actually done in the factory, was a very small proportion of the cost of the car completed ; this item, he said, was the only one in which mass production methods could effect an economy. In their own case the most modern American methods could not reduce it by more than £20, and even then the quality and performance of the finished car would necessarily be affected.

" Most American manufacturers," said Mr. John, " intend their cars to last only about three years. They use a big, inefficient engine, which is cheaper to make than a smaller, efficient one, and they make the rest of the car just well enough for it to last a certain time. This is their policy, and in its way it is a good one, for their cars soon find their way to the scrap-heap, so that there is a continual market for new cars ; but it produces an enormous rate of depreciation. It is commonly said, indeed, that an American car loses nearly half its value the very day that it is sold !

" Some of us in the British motorcar trade, on the other hand," continued Mr. John, " make our cars just as well as ever we can. This means that the selling price must be relatively high, but the result is a low rate of depreciation, economical running and long life. I could quote examples of some of the first cars we made which covered from a quarter to half a million miles and are still going strong."

New Factory for Bendix Brakes.

That the importance of maximum brake efficiency is to-day being realised more than ever is shown by the much increased business being done by the Bendix Perrot Brake Co. Ltd., of Birmingham. So considerable is this, indeed, that the company has just purchased the factory formerly occupied by the Bowden Brake Co. at Tyseley. This factory is eight times the size of the present Bendix premises. It is being re-conditioned throughout, and will be in full working order by February.

It is interesting to note that Bendix brakes are now being used on Crossley, Humber, Star, Swift, Willys-Overland and Willys-Knight cars, amongst others, whilst most of the leading aeroplane manufacturers employ them. An instance of the magnitude of the aeroplane industry to-day is found in the fact that the Company has received an initial order for 250 sets of brakes for the D.H. Puss Moth alone.

Lights on Private Roads.

In a case just decided at Guildford (Surrey) the solicitors to the Automobile Association defended a motorist charged with leaving a car on the highway without lights, the explanation being that as the car was on a private road, it was not thought necessary to exhibit lights.

Cases of this nature are frequently reported to the Association. It is essential for motorists to know that the Road Transport Lighting Act, 1927, makes it clear that for the purpose of lights on vehicles, " road " means any public highway *and any other road to which the public has access.*

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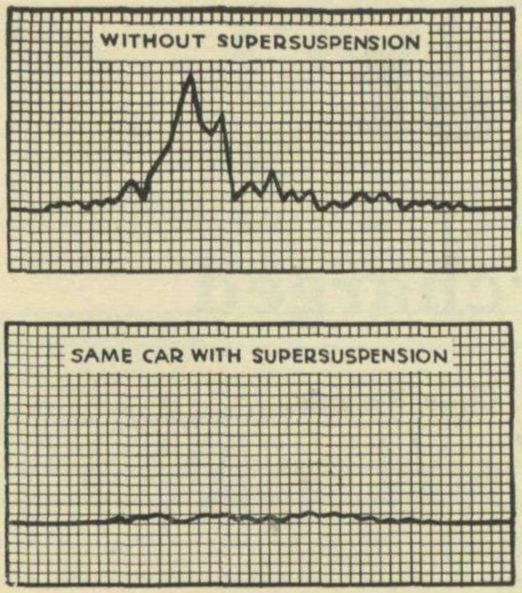

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